Case No 168/92

IN THE SUPREME COURT OF SOUTH AFRICA
(APPELLATE DIVISION)

In the appeal between:

ANDRE JOSIAS REYNEKE..... Appellant

and

RHIAN MERRY TOUYZ..... Respondent

CORAM: CORBETT CJ, HEFER, NESTADT, JJA, KANNEMEYER et MAHOMED AJJA.

DATES OF HEARING: 15, 16 and 17 February 1994

DATE OF JUDGMENT: 28 March 1994

J U D G M E N T

/CORBETT CJ .....

2 Introduction As the trial Judge in this matter rightly remarked, this is an unfortunate case. On 19 May 1987 the respondent (plaintiff in the Court below), a medical doctor then 28 years of age, entered the Park Lane Clinic in Johannesburg for the birth of her second child. Her first child had been born by Caesarean section and it was intended that the second child should be delivered the same way. Her gynaecologist and obstetrician was Dr J Adno. He figured as the second defendant in the Court a quo. Dr Adno arranged for the appellant, Dr A J Reyneke (first defendant in the Court a quo), to act as the anaesthetist. The Caesarean section was to be performed under an epidural anaesthetic administered by the appellant.

The respondent was admitted to a ward in the Park Lane Clinic at llh45 on 19 May and at about 12h20 she was taken to the operating theatre. There she met

appellant for the first time. He, with nursing assistance, then administered an epidural. When the respondent was suitably anaesthetized, Dr Adno came and delivered the baby by Caesarean section. The delivery went smoothly and it was an uneventful birth. At about 13h45 respondent was returned to the ward.

Epidural Anaesthesia

Before describing respondent's subsequent medical history, it is necessary to give some account of how local anaesthesia is produced by an epidural injection and of the procedure followed by the epiduralist.

The human central nervous system consists of the brain and the spinal cord which is connected to it, and their associated membranes, fluids and blood vessels. The spinal cord is contained within, and protected by the spinal column which consists of connected vertebrae. In

each vertebra there is an opening known as the vertebral foramen and these openings, aligned within the spinal column, form the vertebral canal within which the spinal cord is contained. The anterior portion of each vertebra consists of a flat, roughly circular protuberance known as the "body". The space between the bodies of adjacent vertebrae is filled by a pad called a "disc". Between vertebrae, on the sides and posteriorly, there is a ligament, the ligamentum flavum, which helps to provide protection for the spinal cord. Posteriorly each vertebra has a projection named the "spinous process". The spaces between adjacent spinous processes are filled by interspinal ligament.

The vertebrae of the spinal column are named (in descending order) the cervical vertebrae, of which there are seven, the thoracic vertebrae, of which there are twelve, and the lumbar vertebrae, of which there are five. Below that one finds the sacrum and the coccyx.

this case we are concerned only with the lumbar vertebrae, which for convenience are referred to (again in descending order) as L1 L2, L3, L4 and L5. The gap between vertebrae is called an interspace; and these interspaces are identified by the vertebrae above and below them. So, for example, the space between L1 and L2 is known as the Ll/2 interspace, and so on.

The spinal cord is composed, inter alia, of a bundle of spinal nerves which emerge and branch out in pairs from the vertebral canal at various levels. At about the level of the second lumbar vertebra the spinal cord terminates in a number of separate descending nerves which occupy the spinal canal below that point, and because of their supposed resemblance to a horse's tail are referred to as the cauda equina.

The spinal cord is enveloped by three coverings or membranes (meninges), viz the pia mater, the arachnoid and the dura mater. The pia mater is closely attached

the spinal cord and continues as a strand in the cauda equina. Outside the pia mater is the arachnoid, a thin and delicate membrane. The space between them, the subarachnoid space (or otherwise called the subdural space), is filled with a fluid known as cerebro-spinal fluid ("CSF"). This helps to protect the spinal cord. The outer dura mater, which is made up of tough fibrous tissue, lies close to the arachnoid. Between the dura and the walls of the spinal canal, made up of the bony vertebrae and the intervening ligamenta flava, there is what is known as the epidural space. This contains a number of blood vessels.

As a nerve root leaves the vertebral canal, through an opening formed by a portion of the adjacent vertebrae known as the pedicle, it carries with it for some distance an extension of these dural membranes, which then fuse with the nerve sheath. The lower portion of the dural covering of the nerve root as it

leaves the canal is known as the axilla. In the lumbar region the pairs of nerves leaving the canal are numbered in accordance with the vertebra from which they emerge. Thus the nerves coming from the L5 vertebra are referred to as the L5 nerves. The one on the left is called the left L5 nerve; and the one on the right the right L5 nerve.

The object of an epidural injection is to introduce into the epidural space the chosen anaesthetic drug in sufficient strength to produce what is known as an anaesthetic block, i e an anaesthesia of the nerves serving a particular portion of the body, so that the patient does not experience pain resulting from surgical or other procedures relating to that part of the body. This is done by inserting a special epidural needle into the patient's back at a chosen spot in the lumber region and pushing it through the skin and subcutaneous tissue, through the superspinal and interspinal ligament and

through the ligamentum flavum into the epidural space; and then injecting the drug. There are two approaches that may be employed to administer an epidural anaesthetic. They are the "midline" approach and the "paramedian or lateral" approach. The former entails advancing the needle straight into the back at a point along the midline so as to enable the needle to pass between vertebrae. The latter, as its name indicates, entails inserting the needle from the side and, after striking the bone of the vertebra, easing the needle down until the ligamentum flavum is reached. Each approach has its advantages and disadvantages. And at this stage I might mention that appellant employed the midline approach.

Whichever approach is used, the epiduralist must take especial care not to push the needle so far that its tip penetrates beyond the epidural space and punctures or tears the dura. A dural puncture will

normally, because of a pressure differential, lead to a loss of CSF through the hole into the epidural space. This is often referred to in medical parlance as a "dural leak", or a "dural tap" or a "wet tap". The consequences of a dural leak, as such, are not normally serious. The tear in the dura heals naturally. But the patient usually suffers a "spinal" or "postural" headache. This is a very severe headache which manifests itself while the patient stands or sits in an upright position and subsides or disappears when the patient lies down. It is not clear by what mechanism a spinal headache is caused, but it is associated with a lowering in pressure in the CSF (due to the leak) which is most evident when the patient is in an upright position and much less pronounced when the patient lies down. How soon after the infliction of a tear a dural headache will occur and its usual duration were matters in dispute at the trial and I shall deal with them in more detail

later.

A more important aspect of a puncture of the dura is the possibility of injury to an adjacent nerve within the dura. A nerve is a fragile structure and is readily susceptible to injury from such a puncture.

Respondent's Case It is respondent's case that, in administering the epidural on 19 May, the appellant punctured the dura and caused injury to . the left L5 nerve, with the consequences which I shall later describe.

Respondent's Medical History In evidence respondent told the Court that she well remembered what happened on 19 May and the ensuing week until her discharge from the Park Lane Clinic on 26 May. As regards the administration of the epidural, she stated that at the inception she could feel "a lot of

fiddling, manipulation and prodding" of her back. This she had not experienced when having an epidural anaesthetic for the birth of her first child. While being injected she lay on her left side. On two occasions she was asked by the appellant to sit up. On the second occasion she experienced a headache and dizziness. She informed appellant of this. He told her to lie down again. Once she did so she felt better. She told him this. She had no recollection of at any time feeling any pain, apart from this headache. Otherwise the epidural and the delivery by Caesarean section were to her uneventful.

In his evidence the appellant disputed much of this. He denied any abnormal manipulation, prodding or fiddling, but did have to palpate her back in order to locate the interspace through which he intended to insert the epidural needle. He stated that he asked respondent to sit up only once and on that occasion she made no

complaint about dizziness or a headache. As I shall later show, these disputes have an important bearing on the merits of the case.

After being returned to the ward the respondent was given an analgesic, Omnopon, as prescribed by appellant for post-operative pain. It is not in dispute that a Caesarean section does cause considerable post-operative pain. During the afternoon of 19 May Dr Adno received a message that respondent was having pain despite the fact that she had been given Omnopon. He went to see her, checked on her condition generally and changed the analgesic prescription. Later that evening he visited her again and found her general condition to be good. He continued to visit her daily while she was in the Clinic.

It is respondent's evidence that when Dr Adno visited her on 19 May and on the following day she complained to him that she was suffering from a headache

which came on whenever she sat up and was relieved when

|

she lay down; in other words, from a typical postural headache. He told her to lie still, to have the curtains around the bed drawn and to stay like that until the headache disappeared. On the afternoon of 20 May the problem did resolve itself. Dr Adno denied all of this. He stated that the only complaints that respondent made at this stage related to pain from her operation wound.

Another averment by respondent, which was emphatically denied by Dr Adno, was that at no time while she was in the Clinic did Dr Adno clinically examine her. He merely stood at the end of her bed and asked her how she felt.

On 22 May respondent complained of backache and of discomfort in passing water. Dr Adno, suspecting a urinary tract infection, arranged for a urine sample to be sent for testing. According to him, he clinically examined

her on 23 May and localized the pain as being in

the left renal angle, just under the rib-cage. A verbal report from the laboratory confirmed his suspicion of a urinary tract infection and he prescribed an anti-biotic drug. On 24 May Dr Adno decided to send the respondent for chest x-rays. Because the pain was high up he wanted to make sure that he was not missing anything in the chest. The x-rays came back showing no abnormality.

On 25 May the respondent was still complaining of pain in her back. Dr Adno again examined her and arranged for her to be seen by a urologist, Dr Gecelter. This was done and Dr Gecelter confirmed a resolving urinary tract infection. On 26 May, before respondent was discharged from the Clinic, Dr Adno again examined respondent. She still had a tenderness in the left renal angle, but was allowed to go home. At no time, according to Dr Adno, did respondent complain to him of a pain in the lower back, radiating into her buttock. Had

she done so he would have been alerted to some spinal problem and would have asked a neurologist or an orthopaedic surgeon to have a look at her.

The respondent, on the other hand, was emphatic in her evidence that she did, on 22 May for the first time, experience a pain in the lower lumbar region, which persisted and on 24 May began radiating downwards into her left buttock; and that she told Dr Adno and Dr Gecelter about this. She was also suffering from a consequential postural defect: she was stooping and had an incipient scoliosis, i e a curvature of the spine in a lateral direction. She left the Clinic in a wheel-chair.

After returning home, according to respondent, she continued to suffer lumbar pain. It got progressively worse and radiated down her left leg. On 29 May Dr Adno went overseas and was away until 6 July. Respondent consulted his locum tenens, who happened to be

his son. Dr Adno Jnr suggested a course of physiotherapy. Between 2 and 8 June respondent had three sessions of physiotherapy, but this merely served to aggravate the pain. She then consulted a physician friend, Dr M Rumbak, who in turn referred her to an orthopaedic surgeon, Dr A L Orford. Dr Orford saw her on 10 June. He noted her symptoms - including severe backache and left leg pain, numb patches in her buttock, scoliosis and a restricted left leg raise - and on the strength of these symptoms and an x-ray examination diagnosed a disc protrusion. She was admitted to the Brenthurst Clinic for what was termed "conservative treatment". This included pelvic traction, gentle physiotherapy, pain-killers and anti-inflammatory drugs. After being treated in this way for a week there was some improvement in her left leg raise, but she still had a severe scoliosis. Dr Orford then decided to ask an anaesthetist, Dr A Descroizilles, to administer cortisone

by way of an epidural injection. This was done on 17 June.

Dr Orford continued to see respondent daily. The cortisone injection did not appear to have made any significant difference and respondent developed "hard" neurological signs. (By "hard" in this context is meant signs which can be objectively detected; as opposed to "soft" signs consisting of what the patient subjectively feels and tells the doctor.) These hard signs were that what had been a diffuse pain with subjective sensory changes had become associated with weakness in certain muscles, which indicated irritation of the 5th nerve root.

Dr Orford decided to call in a neurosurgeon, Dr S Thomaides, and together they investigated the respondent further. The first such investigation was a magnetic resonance imaging ("MRI") scan, done by a Dr P Sneider (a radiologist) on 19 June. An MRI scan may, in

layman's terms, be said to produce an image of a "cut" through the body at a determined plane. It may be a sagittal view, where the plane is vertical, or an axial view, where the plane is horizontal. The anatomical information is gathered by the scanner over a period (15 to 20 minutes) and by some mysterious process involving computer technology the three-dimensional data collected are regenerated to produce a single-plane image. As one expert witness put it -

> "...what one is seeing here in fact is the computation, a mathematical computation by the computer, by a machine, so it is in fact not really showing the anatomy, it is a reconstruction of the anatomy that is taking place."

It would seem too that the "slice" shown has a thickness of about 6 mm. In this case one of the images produced by Dr Sneider's scan, an axial study at the L4/5 disc level (Exh "L") , showed what has been referred to as an

"abnormality", which became the subject of much discussion and debate at the trial. In his report at the time Dr Sneider said that it suggested left nerve root compression in that area.

Dr Orford decided to follow this up with a lumbar myelogram. This is a procedure whereby a solution containing an iodine dye is injected through the dura (or theca) into the CSF. This dye cannot be penetrated by x-rays and is seen as a dense collection within the canal. In this way an abnormality such as a protruding disc or a tumour is shown up. A myelogram procedure was performed on the respondent by a radiologist, Dr A Mattison, on 20 June and a number of x-ray photographs (or myelograms) were taken. And on the same day, while the dye was still in situ, a CAT scan of the lower lumbar region was done by Dr S A Kimmel.

Dr Orford does not seem to have gained much assistance from the myelograms and the CAT scan, but he

regarded the MRI scan as matching the clinical picture of a left fifth nerve root pathology. He examined the respondent again on 23 June. At that stage the straight leg raise had again deteriorated and her scoliosis remained the same. There were hard signs of a fifth nerve root problem on the left-hand side. She had, in the opinion of Drs Orford and Thomaides developed a "neurological deficit" and they decided to perform an exploratory operation.

This operation, done by Drs Orford and Thomaides under a general anaesthetic administered by Dr Descroizilles, involved a midline incision at the L4/5 level, an exposure of the spine, a hemi-laminectomy, i e a cutting away of the laminae of the L4 and L5 vertebrae on the left, and an excision of the ligamentum flavum. The purpose of this was to create a window through which the surgeons could examine the suspect area. in an operation report, dated 26 June, Dr Orford listed their

findings as follows:

> "1. A prolapsed disc at 4-5 in the extreme lateral position.
>
> 2. A somewhat long and massive pedicle stretching the nerve root downwards.
>
> 3. A CSF leak and dural laceration in the axilla of the root."

They did a discectomy, i e a removal of the disc, at the L4/5 level to decompress the nerve root and closed up the operation wound.

These findings were described in more detail by Drs Orford and Thomaides in evidence given by them at the trial. Dr Orford explained that they found a protrusion of the L4/5 disc and that he used the term "prolapsed" in this sense. Dr Thomaides, who performed this part of the surgery, stated that he found a "bulging disc" that was -

> ".... immobilising the nerve root against the lateral side or the outside of the lamina".

He stated further:

> ".... it was an immobile, swollen nerve root we found and we considered this bulging disc a cause of the immobile nerve root."

Dr Orford described the nerve as being swollen to "about twice the size of normal". Although Dr Orford referred in evidence to "an enlarged pedicle pressing down onto the root", Dr Thomaides was of the opinion that the pedicle was not causally connected with the pain which the respondent was suffering. Dr Thomaides did, however, say that they had to "take away" some of the pedicle to give a good decompression on the swollen nerve root.

In regard to the third finding, Dr Thomaides described how he found what is termed "granulation tissue" in the axilla of the L5 nerve root on the left-hand side. The granulation tissue was soft and friable and he was able to suck it away with a sucker. The area

occupied by this tissue was 3/4 mm in length and 2/3 mm in width. Immediately this tissue was removed there was a spurt of CSF through a 2 mm slit or tear in the underlying dura enveloping the nerve root. He closed off this slit with a material called Spongistan. This and the release of pressure on the root resulting from the removal of the disc and the cutting away of part of the pedicle caused the leak to stop.

When they found the dural tear and the injured nerve the surgeons called over the anaesthetist, Dr Descroizilles, and showed them to him. This was confirmed in evidence by Dr Descroizilles.

After the operation the respondent did not settle well or follow the expected recovery pattern. Dr Orford became concerned that she was developing or had developed a complication irritating the nerve root. A scan with intravenous contrast done by Dr Thomaides about six weeks after the operation showed possible

granulation tissue. The surgeons decided to operate again. This operation was performed on 4 August 1987. It is not necessary to canvass in detail what the surgeons found and did on this occasion. It is sufficient to mention that they found a small fragment of protruding disc (which had escaped removal at the previous operation) and a mat of scar tissue over the damaged fifth nerve root which was bending the root down. They removed the fragment of disc, further freed the nerve and did a neurolosis, i e a cleaning of scar tissue off the nerve root.

Dr Orford saw respondent again on 10 September and cm several occasions thereafter but there was no improvement. She still suffered from severe ongoing pain in back and leg, muscular weakness and a restricted leg raise. He felt there was a problem of neural injury with scarring and instability of the spine. The respondent was referred to other neurosurgeons,

including Dr S L Levy, and Dr Hagen. The latter was then in charge of the pain clinic at the Johannesburg Hospital. The respondent spent about ten days in the pain clinic during December 1987, but without any improvement being achieved. Dr Hagen recommended the insertion of deep brain stimulators for pain relief, but this was a radical procedure and she was not prepared to undergo it.

In January 1988 the respondent again consulted Drs Orford, Thomaides and Levy. Drs Orford and Thomaides suggested that there might be some instability in her back and that they should perform a spinal fusion. The respondent decided to obtain a second opinion and consulted Dr C Froman. After doing various investigations Dr Froman advised that a spinal fusion was necessary to give her a "solid back". On 11 May 1988 Dr Froman and another neurosurgeon performed a spinal fusion operation, during the course of which they removed

"dense" scar tissue.

The respondent described (in evidence) her condition prior to this operation as follows:

> "The pain was persistent, it was intractable, it was chronic, it was severe. I was in a great loss (sic) of distress and discomfort because of this pain. This pain was in the same site, at the back of my leg, in the back and I was still in this very bad forward flexed position. My posture was poor, I was still walking bent forward."

After the spinal fusion she was able to walk more erectly, but the pain persisted.

In March of the following year Dr Froman, thinking that an acute exacerbation of pain in respondent's back might be due to the plates and screws from the previous surgery having come loose, operated again and removed the plates and screws. Despite this operation the respondent continued to suffer back pain

and, particularly, radiating pain in her left leg.

In about November/December 1989 an acute exacerbation of back pain resulted in Dr Froman giving her a cortisone injection into her back; and from the beginning of 1990 she underwent for approximately eight months an intensive course of physiotherapy. In August 1990 she was advised that physiotherapy would not help her neural problem. The course was stopped and the respondent simply carried on with analgesics and anti-inflammatory drugs. Because of certain side effects she tried to limit as far as possible her use of these drugs.

When she gave evidence at the trial (i e in August 1991) the respondent stated that, as a result of. her postural defect and pain, her main disabilities related to movement. Movement aggravated pain. She was unable to bend and extend her back at all. She could not lift objects of any appreciable weight. This posed a problem in regard to looking after her children,

hindered her in housework, precluded her from engaging in sport and social activities such as dancing and drastically affected her intended medical career.

The general consensus of expert medical opinion given at the trial was that the respondent had sustained permanent and irreversible damage to her back and the L5 nerve and was suffering from what was termed a "failed back syndrome". There did not appear to be any form of medical treatment, surgical or other, which could cure this. The most likely explanation of her pain was scar tissue pressing on and constricting the nerve root. This was surgically un treatable for, even if it were excised, it would re-form.

Respondent's Action In May 1990 the respondent instituted an action for damages in the Witwatersrand Local Division, citing as defendants the appellant, Dr Adno and the Park Lane

Clinic (Pty) Ltd (as third defendant). In her amended particulars of claim respondent alleged, in regard to her claim against appellant, that in administering the epidural anaesthetic and subsequently, i e in regard to after-care, appellant failed in a number of respects to act towards the respondent in a manner that was reasonable and in accordance with proper professional standards and skills; and that this was in breach of the duty which he owed her by virtue of the agreement between them whereby he undertook to administer to her the epidural anaesthetic. In her claim against Dr Adno respondent similarly alleged negligent failure on his part to exercise proper professional skill and care, both in regard to his choice of appellant as anaesthetist and in regard to the after-care of the respondent. The claim against the Park Lane Clinic was based upon alleged negligence on the part of the nurses who attended the respondent while she was a patient there. It is not

necessary to detail all these grounds of negligence. Many of them have fallen away and the action against the Park Lane Clinic was withdrawn at some stage before trial.

The case was heard by Plewman J. He came to the conclusion that a case of causal negligence had been established against appellant, but not against Dr Adno. He assessed damages in the total sum of R972 320. This appellant was ordered to pay to respondent, with costs. In the claim against Dr Adno the learned Judge ordered absolution from the instance with costs. The appeal is against the finding of negligence on the part of appellant and, in certain respects, against the quantum of damages awarded.

The trial Judge's conclusion that the appellant had acted negligently was based upon three cardinal findings of fact, viz:

(1) That in administering the epidural to respondent appellant tore or punctured the dura in the region of the axilla of the left L5 nerve and at the same time injured the nerve root itself.

(2) That during the administration of the epidural the respondent suffered a spinal headache.

(3) That the occurrence of this spinal headache was made known at the time to the appellant.

Upon the basis of these findings the trial Judge held that, having thus punctured the dura and touched the nerve, the appellant failed in his professional duty and was guilty of negligence in that (a) he ignored "the first and most obvious warning of his mistake" and failed to react to her complaint of a spinal headache; and (b) after respondent had returned to the ward, he failed to visit her or take any steps personally to ensure that all

was well by, for example, telling either Dr Adno or the nursing staff of the incident in the theatre or instructing them to take particular care.

In the heads of argument filed by appellant's counsel the submission is made that the trial Judge found that the appellant was negligent in lacerating the dura and that this finding is contrary to the expert evidence, including that of Prof Moyes, respondent's own witness. There is no substance in this submission. It is clear to me that Plewman J did not hold that the puncture of the dura and the injury to the nerve per se amounted to negligence. He held, as I have indicated above, that the appellant's negligence lay in failing to appreciate that this had happened and/or to take steps to remedy the position. I might add that the medical experts were agreed that even the most expert and careful epiduralist may sooner or later cause such an injury.

The admitted fact that appellant is not

registered as a specialist anaesthetist featured prominently at the trial both in the case against appellant and in the case against Dr Adno. The trial Judge held, however, that this was not of importance as the true enquiry was whether the appellant conducted himself in accordance with the standards pertaining to a person claiming expertise in the field of epidural administration. Here I might add that by May 1987 appellant had considerable experience in this field. He had studied and practised anaesthesia in England for over a year and had obtained a Diploma of Anaesthesia there. In this time he had done about 450 epidurals. On returning to South Africa and in September 1986 he set up practice in Johannesburg as an obstetric anaesthetist. By 19 May 1987 he was doing about 60 epidurals a month and had worked with Dr Adno on about 25 previous occasions. On appeal nothing was made of the fact that appellant was not a registered anaesthetist.

34 I turn now to consider the trial Court's findings of fact.

The Dural Tear and the L5 Nerve Injury The finding that appellant caused a dural tear and injured the L5 nerve root rests upon an inference drawn as a matter of probability from circumstantial evidence. The principal circumstances relevant to this issue and favouring this finding are:

(1) The fact that respondent had no record of back injury or back pain prior to 19 May 1987.

(2) The fact that during the operation of 26 June 1987 Drs Orford and Thomaides observed a dural tear and a swollen L5 nerve root.

(3) The averment by respondent, which was accepted by the trial Judge, that during the administration of the epidural she experienced

headache which had all the hallmarks of a spinal headache.

(4) The averment by respondent, also accepted by the trial Judge, that the spinal headache persisted until the afternoon of 20 May.

(5) The averment by the respondent, again accepted by the Court a quo, that as from 22 May respondent suffered from backache in the lumbar region, which later (some two or three days after leaving the Clinic) started radiating into respondent's left leg.

(6) The worsening pain and postural defect which ensued thereafter and led to the various surgical and other procedures described above.

I intend to consider each of these circumstances in turn and also their cumulative effect; and then to deal with a number of factors, relied upon by the appellant, which

tend to show that it is improbable that appellant caused the dural tear and nerve injury.

History of Back Injury or Pain

It is true that prior to 19 May 1987 the respondent had not apparently shown any symptoms of back injury or experienced any back pain and it is common cause that shortly after leaving the Clinic she did exhibit such symptoms in the lumbar region. (I leave out of account for the moment whether she experienced such symptoms while still at the Clinic, an issue to be considered later.) This, by itself, would suggest that her back problem was related to the epidural procedure administered on 19 May. But the picture is not as simple as all that for when Drs Orford and Thomaides operated on 26 June they found a bulging disc which was impinging on the L5 nerve root. Moreover, this finding seemed to confirm their prior clinical diagnosis. A number of the

expert witnesses called on behalf of the appellant, Dr Snyckers, Dr Rosman and Dr Van Niekerk, expressed the view that the clinical picture as from 19 May was suggestive of a disc pathology. Prof Van Dellen, respondent's witness, was constrained to agree that the majority of symptoms were consistent with a prolapsed disc syndrome. Similar concessions were made by Prof Moyes and Dr J B Craig, both respondent's witnesses. And, indeed, while cross-examining Dr Rosman, respondent's counsel conceded that it was not the respondent's case that the clinical picture up to about 17 or 18 June was "inconsistent with disc protrusion".

The trial Judge came to the conclusion that the radiological investigations prior to 26 June did not provide any clear evidence of a disc pathology. He conceded that it was difficult to reconcile the broad picture on the radiological evidence with the evidence of Drs Orford and Thomaides. He concluded, however, that

the pre-operatlve evidence did not justify the removal of the disc by Drs Orford and Thomaides; and that, with the benefit of hindsight, it was very probable that the removal of the disc was unnecessary and an incorrect treatment. For these reasons he rejected the argument that the real cause of respondent's problems was a disc condition -

> ".... since the disc condition would have had to arise between 19 and 26 June. The probabilities of it so doing are wholly against this."

(1 presume that the reason for the reference to 19 June is that that was the date of the last radiological examination. If that is so, the reference should strictly be to 20 June, when the myelograms and the CAT scan were done.)

I have, with respect, a number of difficulties with this line of reasoning. Firstly, it would seem to

reject the evidence based on actual observation of Drs Orford and Thomaides relating to the bulging disc impinging on the L5 nerve root on the ground that the radiological evidence did not positively support their observations at the operation. Yet Prof Van Dellen himself (who made the "biggest impression" on the trial Judge) expressed a strong preference for what was seen at surgery. He said:

> "What you see with the naked eye is of course far more accurate than [what] one is seeing on photography."

Secondly, there was considerable support from the medical witnesses, including Drs Orford and Thomaides, for the view that the "abnormality" on the one MRI scan (Exh "L"), to which I have already referred, was an indication of disc protrusion. Admittedly, that was a matter of some controversy. Thirdly, acceptance of the evidence of Drs Orford and Thomaides as to what they saw in regard

40 to the

dural tear and the swollen nerve and rejection of their evidence concerning the bulging disc gives rise to logical and other inconsistencies. Fourthly Prof Van Dellen himself expressed the view that the decision to remove the disc was justified; as was also the removal of portion of the pedicle. Indeed after a reading of the evidence of Drs Orford and Thomaides describing the nerve root trapped between the disc protrusion and the pedicle, the action taken by them seems to make good common sense. During the evidence and during the argument before this Court some point was made of the fact that the swelling of the L5 nerve root described by Drs Orford and Thomaides could not be seen on the myelograms taken by Dr Mattison on 20 June. There is no substance in this point. Dr Mattison himself conceded that a significant swelling of the L5 nerve root would not necessarily be visible on the myelograms.

So, in my view, it must be accepted that there

was a disc problem which could have started, and probably did start, before 20 June. The lack of any disc symptoms prior to 19 May is a factor of some, but I think limited, significance. According to the expert evidence disc prolapse is commonly encountered during or immediately after pregnancy. To what extent the existence of this disc problem displaces a dural tear and concomitant nerve injury as the explanation for respondent's troubles after 19 May is yet to be considered. The fact of a disc problem is, however, a factor that cannot be ignored.

The finding of the Dural Tear I have already recounted the evidence of Drs Orford and Thomaides in regard to what they found at the exploratory operation of 26 June and, more particularly, the dural tear covered by granulation tissue. It is generally accepted that this tear must have been caused

by some invasive procedure. There were only four possibilities: (i) the epidural administered by appellant on 19 May; (ii) the epidural injection of cortisone by Dr Descroizilles on 17 June; (iii) the subdural injection given by Dr Mattison to obtain the lumbar myelogram pictures on 20 June; and (iv) the operation of 26 June itself.

It seems improbable that either of the procedures referred to in (ii) and (iii) above could have caused the dural tear. Dr Descroizilles testified that he was "probably 90% sure" that he Inserted the needle in the L2/3 interspace. It is common cause that a needle inserted through either the L2/3 or the L3/4 interspaces could not have caused the dural tear in question. Moreover, no symptoms of a dural tear or concomitant nerve injury were apparent on this occasion. Dr Mattison, in turn, stated in evidence that he routinely injected through the L2/3 interspace and only if he had

difficulty through the L3/4 interspace. The needle was inserted under x-ray control. In this case too there were no symptoms of dural tear or nerve injury. He concluded that he could not possibly have caused respondent's dural tear.

By a process of elimination this leaves procedures (i) and (iv) above. I shall later fully discuss the evidence and the probabilities in regard to the hypothesis that procedure (i) was the culprit. In the meanwhile there are certain points to be made about procedure (iv).

The first of these relates to the finding by the surgeons who operated that the dural tear was covered by granulation tissue which was "soft and friable" and could easily be sucked away. On the medical evidence it is difficult to reconcile this finding with a tear having taken place on 19 May, 38 days earlier. Dr Snyckers, a neurosurgeon, was of the opinion that the granulation

tissue found after the operation could not, as a matter of "overwhelming probability", have emanated from the injury caused on 19 May. He explained that the healing process commences with the formation of granulation tissue, the tensile strength of which starts increasing rapidly after the fifth day until it forms scar tissue. After 14 days its strength is not greatly below that of normal skin. He cited, in support of this, a case in his own experience where a rent in a dura had occurred at a previous operation and it was necessary to re-operate slightly more than a week later. By that stage granulation tissue had formed which was no longer "suckable": it has to be scraped off. Dr Snyckers's viewpoint was supported by Dr Rosman, a neurologist. Prof Van Dellen did not fully agree. He seemed to indicate that particular circumstances, such as continuing trauma and the leakage of CSF, might retard the development of scar tissue. When the proposition

that after 38 days scar tissue would have developed was put to him he replied -

> "... what I am prepared to say really at this stage is that you are about 50-50 on the thing."

My general impression on the evidence is that it was improbable, though not impossible, that the granulation tissue which Drs Orford and Thomaides say they found on 26 June could relate to a dural tear caused on 19 May.

The second point to be made is that in their contemporaneous written reports about the 26 June operation Drs Orford and Thomaides did not refer to granulation tissue. Questioned about this, Dr Thomaides agreed that this was "an omission". Dr Orford felt that having mentioned the laceration he had covered the position.

The third point is that if Drs Orford and Thomaides told the truth, they themselves could not

46 have caused the dural tear. Obviously for granulation tissue to have formed over the tear, the tear itself must have taken place some time prior to 26 June. One is hesitant to roundly reject their evidence about the finding of granulation tissue. The only negative factor here is the omission of any mention of granulation tissue in their reports. It was suggested in argument before us that a tear could have been caused (by either Dr Orford or Dr Thomaides) while the lamina was being cut away. But, apart from the presence of granulation tissue, the difficulty is that there was no proper cross-examination on this point. In Dr Orford's case appellant's counsel merely hinted at this in the course of cross-examination about the removal of the lamina; and in re-examination Dr Orford stated that he was certain they did not cause the tear. In the case of Dr Thomaides the direct question was put in cross-examination. It elicited an indignant reply: "That is a

terrible accusation to sling at a neuro-surgeon." And the matter was taken no further.

The Alleged Spinal Headaches The questions whether the respondent suffered a spinal headache during the administration of the epidural on 19 May and whether such headache recurred thereafter until the afternoon of 20 May are, as I have indicated, hotly disputed issues, which gave rise to allegations on the part of the respondent and denials on the part of the appellant and Dr Adno.

At the trial (which commenced on 26 August 1991) the respondent stated that she remembered the administration of the epidural well and was positive about the spinal headache which occurred immediately after the completion of the epidural injection. But prior to the trial the respondent appears to have been very equivocal on this issue. During the period June to August 1991 she was examined by a number of medical

experts who gave evidence at the trial. They recorded contemporaneously what the respondent told them about herself and her case history and deposed to this at the trial. From their evidence a contradictory . picture emerges.

Dr J B Craig, who saw the respondent on 17 June 1991 and was called on her behalf, recorded in his report that apart from this epidural seeming to take longer than her previous one, the respondent did not recall any other "untoward" experience during its administration. He further recorded:

> "The patient thinks that she recalls having a headache later in the afternoon after her Caesarian section. This headache persisted until the next day- - -"

In evidence Dr Craig confirmed this and stated that had the respondent told him that during the administration of

the epidural she sat up and felt a severe headache which was relieved by lying down, he would have recorded this, In cross-examination the respondent confirmed the correctness of Dr Craig's report, but gave no explanation for the inconsistency on her part which it revealed in regard to the occurrence of a spinal headache on the operating table.

Prof Moyes, also one of the respondent's witnesses, who saw the respondent early in August 1991, recorded in his report that respondent informed him that she experienced a severe headache a few hours after the Caesarean section. In evidence-in-chief it was put to him (a leading question) that she told him of a headache experienced during the administration of the epidural. He appeared to assent to this. Under cross-examination he could not explain why this was omitted from his report. Eventually he conceded that respondent "may or may not have made that point at the time", but that

"between that time and this case" it was "brought to (his) notice". This evidence leaves one in considerable doubt as to whether the respondent did in fact tell Prof Moves about the spinal headache during the epidural. In fact, later in his evidence under cross-examination Prof Moyes appeared to agree that the complaint to him was that the headaches "commenced several hours later".

Prof Van Dellen had a consultation with the respondent on the afternoon of 8 August 1991. In evidence he stated with reference thereto:

> "She indicated on that afternoon that it was not a totally uneventful epidural but I was not able to determine exactly whether there was a specific headache at that time."

On the other hand, Dr Rosman, one of the witnesses called by the appellant, who saw the respondent on 1 August 1991, was told by her that after the epidural

and the performance of the Caesarean section she was told to sit upright, but she developed a headache and felt dizzy and was then told to lie down. This was before she was taken back to the ward. This, of course, is somewhat different from the respondent's evidence that she experienced the headache immediately after the epidural was completed and before the Caesarean section, but it does amount to an indication of a spinal headache in the theatre.

Only portions of Dr C J T Craig's report were dealt with in evidence and consequently it would not be fair to place reliance on his evidence on this particular point. A curious evidential conflict did, however, arise from his testimony. He stated that the respondent told him (i) that she did develop a severe headache postoperatively on 19 May; (ii) that she told Dr Adno about this; and (iii) that at this time she herself wondered whether she may have suffered a dural puncture,

but she did not communicate her thoughts to Dr Adno. Respondent herself denied in evidence that she told (iii) to Dr Craig. She stated that it was only about three or four weeks later that she placed importance on this headache. This was when, during discussions with Drs Orford and Thomaides, they suggested that the headache could have been caused by a CSF leak. There is incidentally no indication in the evidence of Drs Orford and Thomaides that they were told about the respondent's spinal headaches or that they suggested that the headaches might have been caused by a CSF leak.

It must also be mentioned that on 13 January 1989 the respondent wrote a letter to the SA Medical and Dental Council registering a complaint against the appellant in regard to the administration of the epidural on 19 May. In that letter she stated that at some stage of the epidural the appellant told her to sit up. On doing so she began to suffer from a headache and

dizziness and complained of this to appellant. He told her to lie down once again. In view of this, it is somewhat strange that shortly before the trial the respondent should have displayed so much inconsistency and uncertainty about the alleged occurrence of a spinal headache in the theatre.

The respondent's evidence would indicate that her initial spinal headache occurred within minutes of the dural tear occurring; and that it disappeared a little more than 24 hours later. Respondent testified further that on 21 May she got up and went to see her baby in the nursery next door. She also went to the toilet. According to the evidence this behavioural pattern was atypical. The general consensus was that a spinal headache is extremely severe in its impact; it is incapacitating, often associated with nausea, vomiting and neck stiffness and the patient cannot get out of bed. It does not usually occur immediately and generally lasts

several (three to five) days. Drs C J T Craig and Koller produced a joint minute of agreement (Exh "Q") in which they expressed the view that a patient who has suffered a headache associated with a dural puncture would not be able to be up and about on the second postoperative day. Dr Koller also expressed the view (concurred in by Dr Adno and Sister Payne) that a patient with a spinal headache would probably not be able to breast-feed a baby; yet according to the hospital records respondent breast-fed her baby in the early morning of 20 May and again later that day.

It is respondent's case that appellant punctured the dura and at the same time injured the L5 nerve. It is common cause that the part of the dura where the tear was found by Drs Or ford and Thomaides is very close to the surface of the L5 nerve and that injury to this nerve is a likely consequence of such a dural puncture. Injury to the L5 nerve caused by an epidural

needle would, according to Prof Van Dellen, be an acute one, accompanied by redness, swelling and pain. At the moment of injury the pain would, according to Prof Morrell, be "lightning-like" and travel down the leg. Dr Rosman described the pain when a nerve is injured as -

> "... sharp, stabbing, lancinating.... very severe."

Dr Snyckers spoke of a

> ".... shock-like electric pain down the leg in the distribution of the L5 nerve root."

It was suggested by some of the experts - and conceded by others - that exceptionally one might experience merely a paraesthesia, i e a tingling sensation. It was also suggested that if the nerve had been anaesthetized to some extent by the injection of some of the anaesthetic drug through the hole in the dura, no pain at all might

be felt; but it seems to me from the evidence that this involves the concurrence of too many unlikely factors to be more than a remote possibility.

Generally speaking, it would appear that a nerve injury such as that alleged in the present case would probably be accompanied by a severe, lightning-like pain. The fact that the respondent experienced no such pain leads to the inference either that, if the dura was pierced on 19 May, the nerve escaped injury or that neither the dura nor the nerve were injured and that the alleged complaints of spinal headache are unfounded. Whichever way one looks at it, the absence of pain raises a substantial improbability in regard to respondent's case.

According to the respondent the appellant was informed at the time of the spinal headache which occurred during the administration of the epidural; and apart from telling her to lie down he did nothing further

about it. This, in itself, raises an improbability. The appellant knew all about dural headaches and their causes. Had he been told about such a headache, it is to some extent improbable that he would have virtually ignored it, taken no steps to ensure that Dr Adno and/or the nursing staff were informed and done nothing about it himself. One should not, however, attach too much importance to this. After all, the whole complaint against the appellant is that he was neglectful, and therefore negligent, in these respects. But it is a factor to be weighed.

Of course, respondent's version also includes the averment that on two or three occasions she told Dr Adno about her spinal headaches and that he merely advised her to lie still. Dr Adno, while denying this, stated that had he been told about such headaches he would have tested her and got in touch with the appellant. No doubt he and appellant would then have

decided on an appropriate course of action, which would have included observing and testing the respondent for neurological signs of nerve damage and taking the necessary remedial action. Again, Dr Adno's alleged supinity after being told of symptoms pointing clearly to a spinal headache is in itself somewhat improbable.

The trial Judge, it is true, gained the impression that Dr Adno believed in a robust, practical approach to matters and did not tolerate "cry babies". Where Dr Adno's evidence conflicted with that of the respondent he preferred the latter. Even after giving due deference to the views of the trial Judge who had the opportunity of observing Dr Adno and the respondent in the witness-box, I feel constrained to differ with him in this regard. The objective evidence does not, in my opinion, reveal an uncaring or inattentive attitude on the part of Dr Adno. As appears from my recital of the facts, he responded promptly and sympathetically to

respondent's complaints in regard to pain on 19 May and during the days thereafter. He took active steps to diagnose and deal with her complaints which, in his view, pointed to a urinary tract infection; and as an added precaution he had her chest x-rayed. He referred her to Dr Gecelter when the urinary tract infection did not seem to be responding sufficiently to his treatment.

It is, of course, alleged by respondent that while she was in the Clinic Dr Adno never gave her a physical, clinical examination: he merely stood at the bed and spoke to her. More specifically, she avers that when she complained about back pain he did not physically examine her back. In my opinion, this is manifestly untrue. In the first place, it seems very improbable that someone in Dr Adno's position should be so neglectful of what was clearly his duty, particularly when a specific complaint such as back pain was drawn to his attention. Secondly, he localized the pain as being

in the left renal angle and on the strength of this took certain remedial action. How he could possibly have done this without a physical examination of the respondent's back is a mystery to me, particularly as she avers that she complained about a pain in the left lumbar region. Moreover, the remedial action taken by Dr Adno clearly confirms his evidence that he localized the pain in the left renal angle. In addition, the contemporary record relating to the x-ray of the respondent's chest (Exh "Z") taken on 24 May also confirms that the complaint, probably conveyed by the respondent herself to the radiographer, was of a pain in the left renal angle. And thirdly, respondent's course of conduct after her stay in the Clinic is totally inconsistent with her general complaint that Dr Adno at no time gave her a clinical examination. She admitted in evidence that she considered his failure to clinically examine her a "gross dereliction" of his obligations, which at the time

"raised a little light bulb in (her) head". Yet some months later, in September 1987, she wrote a personal letter to Dr Adno referring to the "unexpected complications" which had attended the birth of her daughter, stating that she was now "on the road to recovery" and recording her "deep thanks" to him for helping her come through this period. The letter continues:

> "As a token of my sincere appreciation for what you have done for me, I have made a small financial donation on your behalf to the MASA Benevolent Fund. Hopefully one day I will reciprocate treatment in the same noble fashion, as you have helped me, for a needy colleague."

This is hardly the letter of a patient, herself a medical doctor, who had good grounds for believing that her gynaecologist had failed in his duties to her. When cross-examined about this the respondent was evasive and

unconvincing. Moreover, when some 16 months later she wrote to the SA Medical and Dental Council her complaint related only to the conduct of the appellant.

In my view, on the issue as to whether Dr Adno clinically examined the respondent while she was in the Clinic from 19-26 May the evidence of Dr Adno should be preferred. This, of course, has a bearing on the respondent's credibility in general.

In passing, it seems to me, with respect, that there is a logical inconsistency in, on the one hand, the learned Judge's preference for the evidence of the respondent where it conflicted with that of Dr Adno and, on the other hand, his conclusion that Dr Adno could not be held to have acted negligently. Such an evidential preference would lead to findings (a) that Dr Adno was told on several occasions that the respondent was suffering from spinal headaches and (b) that, so far from taking any effectual remedial action, he did not even

clinically examine her. On similar findings the appellant was adjudged to be negligent in the performance of his duties to his patient; and it is difficult to understand why what was sauce for the epiduralist was not, in the opinion of the Court a quo, sauce for the gynaecologist.

I return to the central issue now being considered, viz. whether the respondent suffered from and complained about spinal headaches in the manner deposed to by her. There are two further matters which have a bearing on this issue: (a) the evidence of the hospital records and of the nurses who ministered to the respondent; and (b) the evidence of the physiotherapist, Mrs W Caplan.

At the pre-trial conference the parties agreed that the relevant records of the Park Lane Clinic "were proof of their contents". The records are terse and to some extent fragmentary; and obviously their value as

giving a full picture of the respondent's medical condition is very much dependent on how efficiently and fully the responsible nurses kept them. Nevertheless, the records, taken together with the evidence of the nurses concerned, raise certain probabilities.

The respondent was adamant that during the afternoon of 19 May and during 20 May she complained to the nursing staff about a spinal headache. Sister David, who was on duty and in charge of the respondent's ward from the time respondent returned from the theatre until 19h00 on 19 May and who signed the "day report" for 19 May, gave evidence. She stated that if respondent had complained of a spinal headache during this period she would have recorded this in the nursing report and would have notified Dr Adno. The day report signed by her refers to a complaint about pain. This was an abdominal pain for which various analgesics were, according to the report, prescribed and given. There was no record of

any drug given to deal with a headache. Sister David was also on duty the next day and signed the day report. It contains no suggestion of a complaint about a spinal headache. Similar evidence was given by Sister Paynee in regard to the periods covered by the night reports for 19 and 20 May. I can see no ground for rejecting this evidence. It provides further ground for doubting whether the respondent ever suffered the spinal headaches alleged by her.

The respondent had undergone a Caesarean section, a major abdominal operation, with a painful aftermath. As a matter of probable inference the references in the nursing reports covering 19 to 21 May to pain, and the analgesics prescribed, would relate to pain associated with the operation wound. And this indeed was the evidence of the nurses. This pain was predictable and would not be specifically described. Had an unexpected pain, such as a spinal headache manifested

itself, it seems very likely, as the nurses said, that it would have been noted separately and specifically. This occurred later when the respondent suffered from a backache.

It does not appear to be disputed that Mrs CapIan treated the respondent at the Clinic on 20 and 21 May. In evidence Mrs Caplan described the exercises and other routines which as a matter of practice would have made up a session of physiotherapy. She said that if on the morning of 20 May the respondent had complained of a severe headache or a spinal headache she would not have been able to treat her and would have reported this to the staff. She had no "individual memory" of treating the respondent. In cross-examination it was put to her that the exercises which she required the respondent to do were more limited than what constituted her normal practice and all involved the respondent lying down. She conceded that this was possible, but said that it was

more probable that she "did it (her) way". Significantly it was not suggested that the respondent told her of the spinal headache of which she was allegedly suffering. I consider it to be unlikely that if the respondent had been suffering from a spinal headache, with all its incapacitating features, she would (a) have refrained from telling Mrs Caplan about it, and (b) have submitted to any form of physiotherapy.

To sum up, therefore, I am of the opinion, for the reasons stated, that there are a number of grounds upon which the respondent's evidence about spinal headaches may be regarded as improbable.

The Alleged Backache

It is common cause that the respondent suffered backache from about 22 May onwards. The dispute is whether she complained of a lumbar pain to Dr Adno or whether it was a pain in the left renal angle. Having

regard to the action taken by Dr Adno, viz treatment for a urinary tract infection, x-ray of her chest and the reference to Dr Gecelter, it seems probable that initially at any rate the pain was localized in the left renal angle. It is not disputed, however, that shortly after leaving the Clinic the respondent was suffering from lumbar pain and it may be that this symptom overlapped to some extent with the pain relating to the left renal angle.

This factor of backache is only of importance in so far as it may point to a nerve injury inflicted at the time of the administration of the epidural. While it is a factor to be considered, I do not think that it provides a strong pointer either way. This is because of the complicating factor of a disc pathology, which I have already fully discussed and which could, as I have indicated, account for the respondent's history of back pain prior to 26 June. The onset of this pain not long

after the epidural gives rise to possible inferences either way. On the one hand, it may be said that it is a significant coincidence that the pain should have manifested itself so soon after the epidural. On the other hand, there is (i) expert evidence (Dr Rosman) that the delay of some days in the development of a radiating lumbar pain is, even taking into account the initial effect of the analgesics, inconsistent with the pain being associated with injury to the nerve inflicted by the epidural needle; (ii) expert evidence (again Dr Rosman) that a pain in the buttocks is a classical symptom of a disc protrusion; and (iii) expert evidence (Prof Morrell) that the "classical story" for someone who has suffered nerve damage from an epidural is a residual pain and numbness which gets better and better over a period of time and eventually resolves.

Worsening Pain and Postural Defect As I have indicated above, the worsening pain and postural defect is consistent with a disc pathology. And indeed the deterioration is inconsistent with the "classical story" after nerve impingement by an epidural needle. On the other hand, inappropriate treatment, such as physiotherapy and traction, could have aggravated a nerve injury, if such existed. A further point in this connection is the evidence of Dr Snyckers that the respondent's improvement (particularly in leg raising) after traction was consistent with a "prolapsed disc scenario".

Other Probabilities and Improbabilities In addition to the points already made, there are a number of probabilities and improbabilities which have a bearing on the question as to whether in administering the epidural, the appellant pierced the dura and injured

the L5 nerve.

It is common cause that it was physically impossible for an epidural needle inserted through any interspace other than the L4/5 interspace to have inflicted the injuries to the dura and the L5 nerve seen by Drs Orford and Thomaides on 26 June. The appellant's evidence was that in administering epidurals he would normally insert the needle into the L2/3 interspace, very occasionally into the L3/4 interspace, but never through the L4/5 interspace. He produced hospital records relating to "labour epidurals" (as distinct from "Caesar epidurals") to substantiate this. In explaining his preference for the L2/3 interspace the appellant said in evidence:

> "I use the L2-3 interspace because it is the most suitable space for an epidural. In other words, the spinous processes are much apart at that level and the interspinous space is much easier to feel

> and identify and also the epidural space itself, has been shown that it is the widest at that point and also, the spread of the drug that one wants up to the T4 level which is the nipple level, it would be, you know, more or most even at that level."

He would only use the L3/4 interspace where, often in the case of obese patients, the L3/4 interspace provided easier entry. The L4/5 interspace was unsuitable because that portion of the back was more rigid and the spinous processes would not open up easily; and because of its lower position on the back larger volumes of drug would have to be used to achieve a block up to the T4 level. The appellant was adamant that in the case of the respondent, who was small and thin, he used the L2/3 interspace. He had no difficulty in identifying this interspace.

The appellant's reasons for preferring the L2/3

interspace appear to be cogent and were not challenged in cross-examination. It was put to him that Prof Moyes had testified that the L4/5 interspace was perfectly suitable for an epidural anaesthetic. But, I might add, Prof Moyes also stated that the injury to the dura and the nerve root at the axilla of L5 could "quite possibly" be inflicted by a needle inserted through the L3/4 interspace, and possibly, though less likely, by a needle inserted in the L2/3 interspace. This is clearly wrong.

According to the evidence it would not have been difficult in respondent's case to identify by palpation the different spinal interspaces; and appellant was an experienced epiduralist.

In all the circumstances it seems improbable that the appellant would have deliberately chosen the L4/5 interspace or have used it in error.

Even if it be assumed that for some reason the L4/5 interspace was used, there are certain factors which

appear to make it improbable that the epiduralist could have inflicted a dural tear in the region of the axilla of the L5 nerve. The appellant testified that he always uses the midline approach and that he did so on this occasion. I see no reason not to accept this evidence; nor was it challenged. There was expert evidence to the effect that in order to reach and cause injury to the dura in the area of the axilla of the left L5 nerve root the epiduralist would have had to advance his needle about 1,5 cm beyond the epidural space and have pierced the dura twice. There are markings on an epidural needle which tell the epiduralist how deep the needle is. In order to reach the epidural space the needle has to be inserted to a depth of about 3 cm. On the midline the epidural space itself is about 4 - 5 mm deep. An epiduralist who advanced his needle another 1,5 cm would probably realize that something had gone wrong. Prof Van Dellen conceded this, on the basis that the midline

was adhered to, but argued that in order to reach the axilla the epiduralist must have deviated off the midline and that, assuming such a deviation, the depth of penetration would have been less and would not have involved piercing the dura twice. He gave an estimated distance of 6 - 7 mm beyond the epidural space. This, of course, is in itself not Insubstantial. In order to pass between the spinous processes an epiduralist using the midline approach has to angle his needle in a cephalid direction, i e towards the patient's head. The experts were agreed that in order to reach the axilla of the left L5 nerve through the L4/5 interspace the epiduralist would have to direct the needle downwards, i e towards the patient's feet. From a description given of how the patient is held and the needle inserted (which cannot readily be reproduced) the likelihood of a needle being inserted in a downward direction or deviating during insertion in a downward

direction seems remote.

Another practical problem is the situation of the axilla of the left L5 nerve in relation to the lamina. In a joint minute Dr Sneider and Prof Van Niekerk agreed that the axilla in question was behind the lamina and could not be reached by a needle inserted in the L4/5 interspace. Prof Van Dellen, on the other hand, expressed the view that it was "conceivable" that a needle passing over the lamina could impinge on the nerve root. under cross-examination he conceded that the axilla "was just at the level of the upper end of the lamina" or at any rate "within a millimetre or two millimetres of the upper end of the L5 lamina". Whatever the true position, it seems clear that it would be unusually difficult for the epiduralist to avoid the lamina and strike the axilla of the L5 nerve. This raises a further practical improbability.

In describing his procedure in administering an

epidural anaesthetic the appellant stated in evidence that after inserting the needle into the epidural space he would inject a test dose of a small amount of anaesthetic drug, remove the syringe (leaving the needle in position) and wait for five minutes. The purpose of waiting for five minutes was to check whether the injection had been made into a blood vessel in the epidural space or into the subdural space through a puncture of the dura. If the needle were to have pierced a blood vessel and injected the drug therein, certain physical symptoms would indicate this and also there could be a flow-back of blood in the needle after the removal of the syringe. If the needle were to have pierced the dura and the test dose were to have been injected into the subdural space there would be an immediate intense spinal block similar to a spinal anaesthetic and after removal of the syringe the likelihood of a flow-back of CSF. In the case of the

epidural administered to the respondent this procedure was, according to appellant, followed and no such spinal block or flow-back of CSF occurred.

The likelihood, or at any rate strong possibility, of an immediate spinal block and a flow-back of CSF in the event of a dural puncture (especially one measuring 2 mm and releasing sufficient CSF to cause an immediate spinal headache) seemed to be a matter upon which the experts were agreed. Moreover, appellant's averment that neither such spinal block nor a run-back of CSF occurred in the respondent's case was not in dispute. Indeed in Exh "Q" (the minute of agreement between Drs C J T Craig and Koller) contains the following paragraph:

> "If the epidural anaesthetic given by Dr Reyneke at the time of the Caesarean section had been associated with a dural puncture, then Dr Touyz should have exhibited the symptoms and signs of a total spinal anaesthetic which she did not."

These considerations raise further improbabilities with reference to the contention that a dural tear (and concomitant nerve injury) was caused by appellant on 19 May.

Conclusion Earlier in this judgment I referred to the three cardinal findings of fact upon which the trial Judge's conclusion that the appellant acted negligently was founded, viz the puncturing of the dura and the injury to the left L5 nerve by the appellant; the spinal headache suffered by the respondent during the administration of the epidural by appellant; and the fact that the appellant was informed of this spinal headache when it occurred. In making these findings the learned trial Judge indicated that he preferred to take a broad rather than a piecemeal approach to the probabilities.

I agree that in a matter such as this where there is such a complex matrix of fact and there are so many cross-currents and subsidiary issues it is important to (figuratively) step back and take a comprehensive, overall view of the case. At the same time the probabilities and improbabilities on the many factual issues must be taken into account, both individually and cumulatively. They cannot be ignored or glossed over.

I have dealt in some detail with the more significant of these probabilities and improbabilities. In the final analysis it seems to me that there is a basic antithesis between the operation findings of Drs Orford and Thomaides on the one hand and on the other hand the many improbabilities which I have highlighted and which render it unlikely that a dural puncture and concomitant nerve injury occurred on 19 May. I find it impossible, on the evidence, to resolve this antithesis on a preponderance of probability. I have indicated my

reluctance to reject the evidence of Drs Orford and Thomaides or to hold that the dural tear and the nerve injury occurred during the operation of 26 June. Against this there are the many factors which make it improbable that the dural tear and the nerve injury occurred on 19 May. There are, of course, the epidural Injection by Dr Descroizilles on 17 June and the subdural injection (for the purposes of the myelogram x-rays) by Dr Mattison on 20 June. They are possible occasions on which the damage could have been done, but as I have indicated the probabilities are against this. In my opinion, the respondent upon whom the onus lay failed to establish with the requisite degree of cogency that the appellant was responsible for the dural tear and the nerve injury. This conclusion renders it unnecessary to consider whether the nerve injury was caused at the same time as the dural tear and was not possibly the result of some independent cause, such as impingement of a

protruding disc upon the L5 nerve.

I might add that even if it were to be found that the dural tear and the nerve injury were caused during the administration of the epidural on 19 May, then on the approach of the Court a quo the appellant could only be held to have acted negligently if he was or should have been made aware of this fact. The respondent's case (and the Court a quo's finding) is that he should have been alerted to the likelihood of a dural tear by the spinal headache alleged to have been suffered by the respondent during the administration of the epidural and reported to him. For the reasons which I have canvassed at some length I cannot hold that this was proved on a balance of probabilities.

On appeal it was argued by respondent's counsel that the dural tear and nerve injury (if they occurred) were in themselves proof of negligence on appellant's part or proof that he employed a faulty technique. This

is not borne out by the evidence. Respondent's own witness, Prof Moyes, put it thus:

> "As I understand your evidence and your report, it is not the damage to the dura or possibly the nerve that Dr Reyneke is liable for, but his failure to effect the aftercare?-- Yes I think if you have done a number of blocks sooner or later you will hit a nerve. I mean that is just on the balance of probabilities, but that is not the crime. The crime is to make sure in that particular patient that he has every possible chance of proper treatment afterwards and full recovery."

Various allegations of poor technique on the part of the appellant were made at one stage of the trial by Prof Moyes, but in the end he appeared to withdraw them. Other expert witnesses approved his technique. I do not think that a case of negligence or lack of professional skill was made out on the basis of appellant's technique. Nor did the trial Judge seem to think so.

84 For all these reasons I am of the view that the respondent failed to establish negligence on the part of the appellant. It is accordingly not necessary to consider the difficult question of causation or the quantum of damages. The order of the Court a quo must be set aside and one of absolution substituted. I regret having to come to this conclusion. The respondent has suffered grievously and would seem to deserve recompense. The difficulty in this complex case has been to apportion blame, if any. And, of course, at the other end of the scale a professional reputation is at stake.

Finally, I would record that the appellant made application at the inception of the hearing for condonation of the late filing of the appeal record. The application was agreed to by the respondent, the costs thereof to be costs in the cause. An order to that effect was made.

The appeal is accordingly allowed with costs, including the costs of two counsel. The order of the Court a quo is set aside and there is substituted therefor an order for absolution from the instance with costs, including the costs of two counsel.

CORBETT CJ

HEFER JA) NESTADT JA)
CONCUR KANNEMEYER AJA)
MAHOMED AJA)