بسم الله الرحمن الرحيم

شبكة المعلومـــــات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

﴿ قـــســـم ﴾

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
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To be kept away from dust in dry cool place of
15 – 25c and relative humidity 20-40 %

بعض الوثائق الأصلية تالفة

بالرسالة صفحات

لم ترد بالأصـــل

A Comparative study of intrathecal bupivacaine and ropivacaine in surgery of the lower half of the body

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To my

mother and father

And to my lovely wife

Thank you

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History

Lumbar dural puncture was introduced in 1891 by Wynter in England and Quincke in Germany. Von Ziemssen in 1894 suggested the feasibility of injecting drugs by means of lumbar dural puncture[1]. Leonard Corning, an American neurologist, accidentally pierced the dura during an experiment with cocaine on the spinal nerves of a dog. However, it remains unclear whether his injection produced spinal or epidural anaesthesia[2]. The first planned spinal analgesia for surgery in man was performed by August Bier in 1898. It was clear that Bier understood he was producing spinal anaesthesia, when he injected 3 ml of 0.5% cocaine solution, through self investigation of spinal anaesthesia. He had personal knowledge of the symptoms of postdural puncture headaches[2].

These early years were principally involved with the advancement of spinal (rather than epidural anaesthesia) for at least three reasons. First, the only practical local anaesthetic available until 1904 (when procaine was synthesized) was cocaine, which was more suited to spinal rather than epidural anaesthesia because of systemic side effects at doses required for each. Second, the equipment available for neuraxial blocks favoured spinal anaesthesia because the end point of cerebrospinal fluid return was well defined and did not demand sophisticated glass syringes and needles required

for epidural anaesthesia. Third, muscle relaxants had not been yet introduced by that time and spinal anaesthesia produced superb skeletal muscle relaxation facilitating surgical exposure[2].

These advantages of spinal anaesthesia historically created many enthusiastic clinicians. Morton promoted high spinal anaesthesia for surgical procedures carried out on the head and neck, whereas Koster used total spinal blockade for thoracic and intracranial procedures[2].

Intrathecal anaesthesia was for many years under a cloud of suspicion because of the complications that followed intrathecal anaesthesia, particularly many cases of paralgesia[3]. Kennedy and his colleagues in 1950 described (grave spinal cord paralysis) accompanying the use of spinal anaesthesia, this report was followed by one in 1954 detailing the well publicized Wolley and Roe trial in England where two patients Wolley and Roe had neurologic injury after receiving spinal anaesthesia in the same hospital, on the same day and by the same anaesthesiologist in 1947. The exact cause of their neurological dysfunction remained cloudy[4].

Spinal anaesthesia achieved a widespread popularity as a simple and effective method of producing conduction block for surgery by the presence of some ready available drugs, complete aseptic technique and careful practice[5].

Anatomy of the vertebral column and spinal canal

The vertebral column

The vertebral column represents an elastic and flexible bony structure consisting of 33 vertebrae: 7 cervical, 12 thoracic, 5 lumbar, 5 sacral, and 4 fused coccygeal vertebrae[6]. In adult life, the sacral and coccygeal vertebrae are fused together. The cervical, thoracic and lumbar are independent and although firmly connected by articulations and ligaments, allow a limited amount of movement on one another[7].

The vertebrae are held together by a series of overlapping ligaments, the anterior longitudinal ligament, the posterior longitudinal ligament, the ligamentum flavum, the interspinous and the supraspinous ligaments (Figure 1). These ligaments do not only bind together the vertebral column but also assist in protecting the cord[6].

There are two approaches for intrathecal anaesthesia:

a) Midline lumbar dural puncture in patients placed in the sitting position: will penetrate the skin, subcutaneous fat, supraspinous ligament, interspinous ligament, the ligamentum flavum and the dura.
b) The lateral spinal approach in patients placed in the sitting position: only the skin, subcutaneous fat and ligamentum flavum will be penetrated before piercing the dura[8].

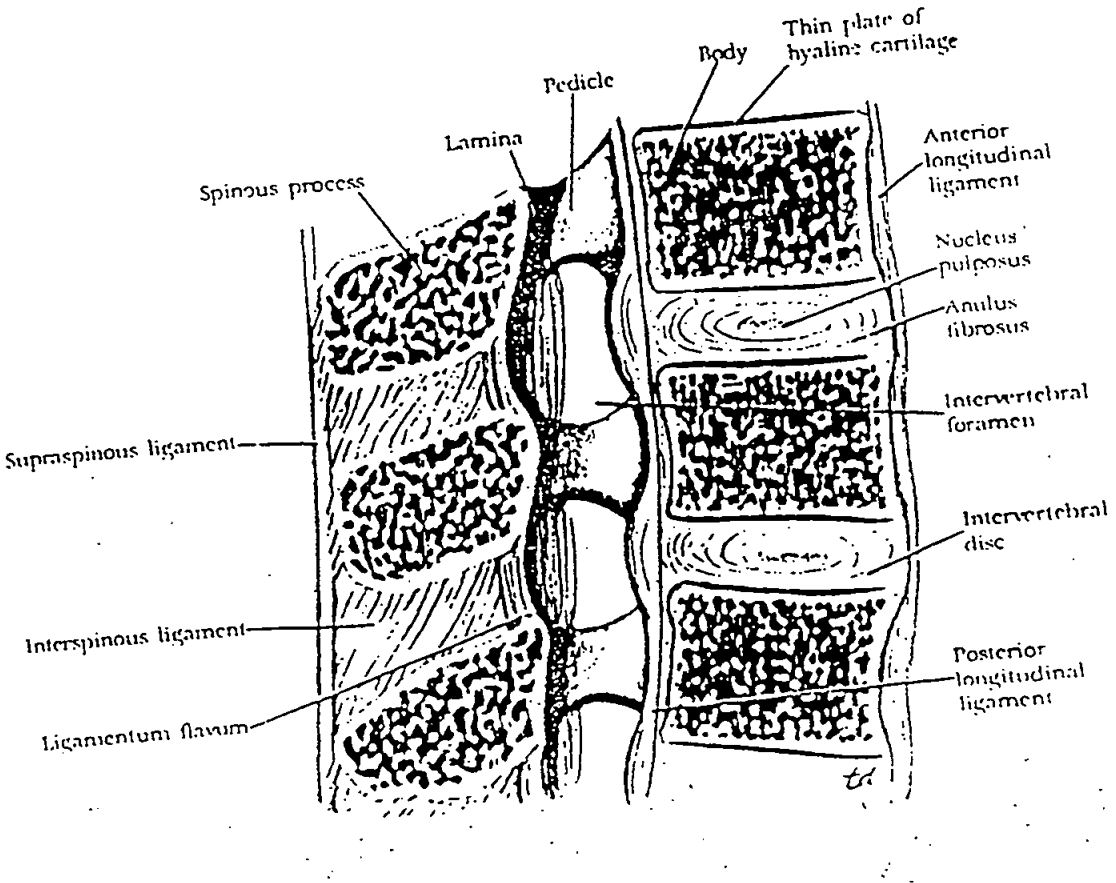

Figure 1: The ligaments of the spinal column (lateral view)[9].