

## ABSTRACTS OF SELECTED PAPERS

### **Measurement of Transcutaneous Oxygen Pressure in Normal and Ischaemic Skin.** By G. S. E. Dowd, K. Linge & G. Bentley. *Journal of Bone and Joint Surgery*, (1983), **65-B**, 79-83.

Transcutaneous oxygen pressure (tcPO<sub>2</sub>) measured by polarographic technique, a non-invasive procedure, was examined in the lower extremities of 161 normal volunteers and compared with 62 patients with ischaemic skin due to peripheral vascular disease. This technique is based on a transcutaneous oxygen monitor, a Clark type of self adhesive electrode which is attached to the skin. The flow of oxygen is measured using a Radiometer connected to a chart recorder. All patients examined were in supine position and the surrounding air was maintained at 22 degrees Celsius ( $\pm$  one degree Celsius). TcPO<sub>2</sub> pressure is directly related to the amount of blood flow and perfusion of the skin although it may be affected by other factors. The mean tcPO<sub>2</sub> pressure of 161 normal volunteers was 70 mmHg  $\pm$  9 SD, while in patients with peripheral vascular disease and intermittent claudication the mean was 52 mmHg. In patients with signs of ischaemic skin the mean tcPO<sub>2</sub> was 33 mmHg and measurements close to gangrenous tissue gave a reading of 10 mmHg as a mean.

In 24 patients who underwent amputation at different levels of the lower extremities those with tcPO<sub>2</sub> of at least 40 mmHg at the level of amputation healed without complication. The patients whose tcPO<sub>2</sub> pressure at the site of amputation was less than 40 mmHg had secondary healing or failed to heal, in spite of good skin appearance during clinical examination.

This study shows that assessing the viability of the skin with this non-invasive method is extremely helpful. It appears superior to both the routine clinical examination and to other methods such as arteriography, which is invasive and more specific for large and medium size vessels. The Doppler ultrasound gives little information of small calibre vessels and tcPO<sub>2</sub> pressure seems to be more practical than other more sophisticated methods using radioactive tracers which require special expertise and are invasive.

Measurement of transcutaneous oxygen pressure is an effective non-invasive method of assessing viability of the skin which has potential applications in circumstances where the perfusion of the skin is a critical issue.

ALAIN ROSSIER & C. TUN

### **Malignant Priapism, a Response to Local Anaesthetic Injection.** By F. Wilson & W. G. Staff. *Brit. J. Surg.*, (1982), **69**, 469.

This case report gives a cautious warning about a rare hazard of block anaesthesia with a plain injection, that is without the addition of adrenalin. Many surgeons use local anaesthesia on paraplegic units when performing circumcision. This rare complication of persistent priapism is thought to be caused by damage to the dorsal vessels of the penis.

R. M. JAMESON

### **Aetiology of Scrotal Sepsis.** By S. M. Whitehead, R. D. Leach, S. J. Ekyn & I. Phillips. *Brit. J. Surg.*, (1982), **69**, 727-730.

This study from St Thomas' Hospital, London shows that 90 per cent of scrotal

abscesses are due to anaerobic organisms, often multiple species are isolated. The apocrine glands become blocked and these organisms are found within the obstructed glands. Because the scrotal density of these glands is higher in negroes scrotal abscesses are more common in the negro race. The complication rate is greater when the spermatic vessels become thrombosed and skin gangrene may result. However, they recommend treatment with metronidazole (Flagyl) in addition to the penicillins or aminoglycosides. This useful survey gives advice on the management of scrotal sepsis which can be a problem in the paraplegic.

R. M. JAMESON

**Sexual Function and Fertility in Paraplegic Males.** By R. D. Amelar & L. Dubin. *Urology*, (1982), **20**, 62-65.

This review, from two urologists in New York, authorities on male infertility, gives a summary of the American experience in this field. They state that erections satisfactory for intercourse can be achieved in less than 25 per cent of paraplegics. Fewer than 10 per cent can ejaculate in a satisfactory manner. They comment that priapism may be seen during the stage of spinal shock but this observation is of no prognostic importance to the man's future sexual performance. (In my experience priapism is less common than penile tumescence during the stage of spinal shock and I agree that in the early days after injury it is impossible to forecast the man's sexual function). They note that spinal lesions above T4 are more likely to give autonomic hyper-reflexia during sexual arousal. They remind the readers that chronic urinary sepsis, the use of catheters and appliances may impair the sex drive and depress sperm production. Histological studies reveal that germinal cell failure, including maturation arrest, is the typical feature on testicular biopsy. The androgen profile may show an initial fall in the serum testosterone with a subsequent rise to low/normal levels; elevation of the LH and FSH is common. They noted that many paraplegic men had gynaecomastia. They wisely advised caution before recommending insertion of penile prostheses to help with erectile impotence as the hazards of scrotal infection and urinary sepsis may lead to rejection of such implants. They mentioned the use of electro-stimulation and neostigmine injections to produce ejaculation. They advise the use of a modified vibrator to assist ejaculation.

R. M. JAMESON

**A Comparative Study of the Human External Sphincter and Periurethral Levator Ani Muscles.** By J. A. Gosling, J. S. Dixon, O. D. Armitage and S. M. A. Thompson. *Brit. J. Urol.* (1981), **53**, 35-41.

This is an informative paper by Professor Gosling and his colleagues from Manchester. He has been interested in the anatomical uniqueness of the urinary sphincters in animals and man. The plain non-striated muscle of the urethral sphincter contains slow 'twitch' fibres which are adapted to maintain a high tone for prolonged periods thus providing urethral compression. In contrast, the periurethral levator ani muscle does not have such fibres. Therefore the value of interpreting electromyography from the pelvic floor levator and muscles is called in to question for such a recording may not supply a representative tracing of activity of the urethral sphincter. This paper is worth reading, one of a series of valuable contributions made by the Manchester anatomists in the realm of urinary controlling mechanisms.

R. M. JAMESON

**Deep Scrotal Temperature and the Effect on it of Clothing, Air Temperature, Activity, Posture and Paraplegia.** By G. S. Brindley. *Brit. J. Urol.* (1982), **54**, 49-55.

This is a useful article with a helpful appendix describing the technical details of the device used to monitor the scrotal temperature. In paraplegic men the deep scrotal temperature is about a degree above the scrotal temperature in the normal active male. Seminal analyses reveal low density with many immotile sperm in the paraplegic. With electro-ejaculation in such patients the seminal analysis may show that only 20 per cent of sperm are motile. If the deep scrotal temperature can be lowered an improvement in sperm density and motility is found. Scrotal split pants are simple to make and are effective. This is a stimulating paper.

R. M. JAMESON