

Although blood contamination of footwear has been highlighted in the article by White *et al.* they have not commented on the prolonged survival of hepatitis B and HIV in the environment, especially in dried blood. Recent work has shown that HIV can survive for several weeks in the presence of dried blood at room temperature (1). Hepatitis B has been shown to withstand drying for up to 6 months and still produce infection on inoculation in an animal model (Dr K Tsiquaye, Senior Lecturer in Virology, The London School of Hygiene and Tropical Medicine, personal communication).

We feel that blood contamination of footwear is a significant health hazard that needs highlighting. Our results suggest that manual cleaning is inadequate and footwear may be a potential source of infection to cleaners and surgical staff.

Inactivation of hepatitis B and HIV can be achieved by moist heat at a temperature of 90°C for 5 min (2,3). Washing machines and footwear designed to withstand regular cleaning at this temperature are available at a cost comparable to existing theatre footwear.

In the most recent data available, HIV infection was estimated to be present in approximately 23 400 individuals in the United Kingdom at the end of 1991 and is therefore a real cause for concern (4). Theatre shoes are contaminated with blood and this persists despite current cleaning practices. To date there are no reports of viral infection acquired from contaminated footwear; however, we believe that modified cleaning practices should be adopted to eliminate this potential hazard.

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Laparoscopic ligation of varicoceles: an anatomically superior operation

Al-Shareef *et al.* (*Annals*, September 1993, vol 75, p345) conclude that laparoscopic ligation of the internal spermatic vein is the operation of choice for the management of varicoceles, but they provide no real evidence for this.

They list a number of advantages for the laparoscopic technique but these are unconvincing:

- 1 It is minimally invasive—this is a debatable point and we would argue that entering the peritoneal cavity to do an

operation that can be done through a small incision retroperitoneally is perhaps more invasive.

- 2 Equally effective as the open procedure—no evidence is presented to justify this claim as no data is presented on the efficacy of the open procedure. The follow-up for the detection of recurrence is short.
- 3 Minimal requirement for analgesia.
- 4 Early ambulation.
- 5 Early discharge from hospital—we routinely perform this open procedure as a day case.

Marcain® infiltration to the wound edges, a Voltarol® suppository preoperatively and Voltarol 50 mg three times a day postoperatively eliminates the need for opiate analgesia. Patients are discharged within 6 h of their operation and return to work within days.

A small incision placed carefully in the skin creases gives a good cosmetic result.

We would suggest that their paper shows that laparoscopic ligation of varicoceles is possible, but does not show conclusively that it is the operation of choice.

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In childhood early ligation of varicoceles is considered appropriate for the prevention of both ipsi- and contralateral testicular atrophy (1). Results of conventional surgery in this age group are, however, frequently disappointing with recurrence rates of 3.6–37.5% (2,3) depending on the method used. Embolisation in experienced hands is reported to give better results, but recurrence still affects approximately 10%. These poor results have prompted us to manage all children (<16 years) presenting with varicoceles by laparoscopic ligation. We have treated 11 children (mean age 10 years) with no recurrence at a mean follow-up of 8 months and with no significant morbidity. We therefore support Al-Shareef *et al.*'s view that a laparoscopic approach provides a superior approach to the varied venous drainage of the testis enabling easy access to retroperitoneal and pelvic vas associated veins which on venography are frequent sources of failed treatment (4). However, scrotal venous crossover has also been reported to be responsible for some cases of failed operative ligation and a laparoscopic approach will not remove this source of failure. Parents must be aware that although the results with a laparoscopic approach may be better than conventional surgery, experience is still in its infancy and, as no long-term follow-up is available, prolonged follow-up is required.

With regard to the technique used by Al-Shareef *et al.*, our experience in children who have not had previous intervention, identification and separation of the artery among a cord of venous structures is not always easy and is more difficult when recurrent cases are encountered with multiple vessels snaking around the artery; because of this our management has been to ligate both artery and veins. The precedent for this in the paediatric age group being the first stage of a Fowler–Stephens orchidopexy. As the testicular blood supply is then dependent on collateral flow around the vas, management of vas-associated venous collaterals must be by minimal dissection. No child who has had both vessels ligated has subsequently developed testicular atrophy. However, the risks of oligospermia after ligation

of both artery and vein in young patients is difficult to substantiate.

Catheterisation of the bladder with the risks of iatrogenic urethral injury is not considered by us to be essential for a laparoscopic procedure. We safely perform laparoscopy on most children without catheterisation by asking the child to void before coming to theatre and palpating the abdomen before preparation. In addition, as most bladder injuries are the result of blind primary port insertion our policy has been to adopt a modified Hasson's procedure so that the primary port is placed under direct vision and off its trocar.

Instrumentation for use in children is becoming available and our standard port sizes are a 10 mm port enabling use of endoclips with two 4 mm working ports. It is possible to obtain a pneumoperitoneum sufficient to work within with an intra-abdominal pressure considerably less than that used by Al-Shareef *et al.*; in our experience a pressure between 6 and 10 mmHg is usually sufficient. The use of the lowest possible volume of CO₂ is recommended to reduce distension-related morbidity.

Although the early results of laparoscopic management of varicoceles are encouraging, long-term follow-up is required before this should replace the current gold standards, and until then parents/patients must be aware of the limited experience available with this technique when obtaining consent. Unfortunately, the short follow-up in Al-Shareef *et al.*'s paper has gone little way to resolving this issue, although they have confirmed our beliefs that anatomically it is a superior approach and that it will probably prove to be the operation of choice.

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More than 30 years ago a seminal article on 'The nature and surgical treatment of varicocele' by Hanley and Harrison (1) emphasised that, in the great majority of cases, a varicocele is produced by varicosity of the cremasteric veins and does not involve the testicular veins which are generally normal. They pointed out that ligation of the cremasteric veins is dramatically effective in relieving pain and improving fertility and that ligation of the testicular veins alone is usually ineffective.

The article on 'Laparoscopic ligation of varicoceles: an anatomically superior operation', by Zain H Al-Shareef *et al.* (*Annals*, September 1993, vol 75, p345) could cause serious confusion. The summary states that "26 varicoceles were treated by laparoscopic ligation of the internal spermatic veins". However, the description of the surgical procedure

states that "all veins (my emphasis) were dissected individually", implying that the operative procedure may also have included ligation of the cremasteric veins which usually drain into the inferior epigastric. The follow-up in these cases ranged from only 3 weeks to 9 months.

As a retired surgeon I have no experience of laparoscopic surgery. However, during my practising years, in those relatively few patients where surgical treatment of a varicocele was clearly necessary, I have since 1962 always followed the Hanley/Harrison teaching with surgical trainees. One of my former registrars, Mr David Dunn, now a consultant surgeon in Cambridge, who has extensive experience of different types of laparoscopic surgery and who has used this technique for varicocele, confirms Hanley's findings (personal communication, 1993).

I fear that this particular branch of laparoscopic surgery may quite undeservedly get a bad name if surgeons are led to believe that all they need do is to ligate the testicular vessels. Perhaps the authors of your article could now clarify this very important matter.

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Reference

- 1 Hanley H, Harrison RG. The nature and surgical treatment of varicocele. *Br J Surg* 1962; **219**: 64–7.

Authors' reply

Sir Reginald Murley's letter raises three questions:

- 1 Of the three groups of veins (spermatic, cremasteric and vasal) which group constitutes the varicocele?
- 2 At what level should the venous ligation be performed?
- 3 Is laparoscopic surgery safe and acceptable in dealing with varicoceles?

It is well recognised that all the three groups of veins contribute for the formation of a varicocele. If only one component is interrupted the remaining veins would be responsible for the recurrence (1). Therefore, it may be ideal in most cases to deal with all three groups of veins using the laparoscopic method.

However, the testicular venous drainage may have extensive anastomoses with various veins, eg renospermatic, lumbar capsular, contralateral internal spermatic, scrotal and saphenous. Some of these collaterals account for the recurrence in a few instances (2,3).

Concerning the level of ligation, scrotal level ligation, as suggested by Hanley and Harrison has a high recurrence rate and carries the risk of devascularising the testis. The best results quoted by them and Sir Reginald are not achieved by most surgeons using this method. The procedure does not seem rational when compared with alternative techniques (4). The method which we described in our article corresponds with the Palomo operation (5). The difference being: (a) the interruption of the internal spermatic veins (testicular) is effected laparoscopically, (b) the veins are clipped individually, (c) the testicular artery is preserved.

The laparoscopic ligation of varicoceles has been proved to be safe and effective (6–10). So far, in our unit we have carried out such ligations on 73 patients. In this ongoing trial the follow-up period now ranges from 2 weeks to 21 months and we have come across two cases of recurrence. We await the long-term results of our own and those of other centres. Perhaps these should mirror, if not improve, on the long-term results of the