

## EDITORIAL

### INTRAOSSEROUS INFUSION

The administration of fluid to a hypovolaemic infant is usually thought to involve the establishment of an intravenous infusion. This is not invariably so and oral rehydration therapy has been a major breakthrough in recent years. However, for the rapid restoration of blood volume, venous cannulation is required. This can prove to be a difficult task for the inexperienced and may lead to a serious delay in therapy. In particular, scalded infants may often have to travel many miles to a regional burns centre. If there was difficulty in establishing venous access at the referring hospital, it will only be worse on arrival at the receiving hospital. There may be considerable relevance, therefore, in the resurgence of interest in the old technique of intraosseous infusion now occurring in the American literature (Rosetti *et al.*, 1985). The technique described involves the placement of a spinal or similar needle in the medulla of the proximal tibia or distal femur.

A letter to the editor of the *American Journal of Diseases in Childhood* (Turler, 1983) suggested that a widely publicised clinical tragedy could have been averted if the now abandoned technique of intraosseous infusion had been employed. He recommended its use in burns and several other circumstances. This was followed by an editorial and a report of the emergency transfusion of catecholamines into the bone marrow of a 6-month-old infant (Berg, 1984).

The European experience with this technique is perhaps more extensive. It appears to have been widely used in the 1940s and still appeared in a standard British surgical text as late as the 1950s (Bailey & Love, 1956). A series of one thousand consecutive intraosseous infusions was reported from Denmark in 1947 (Heinild *et al.*, 1947). Then, as now, it was emphasised that the technique was safe and effective, and osteomyelitis only a risk if hypertonic solutions were used and the infusion maintained for too long. The re-discovery of this technique marks not the second but, at least, the third coming of this particular saviour. In 1977, Valdes wrote in the *Lancet* that 'the results of this therapy in 15 patients was rewarding', but he 'knew of no published reports on the technique'.

Discussions with clinicians in India suggested that the technique was well known there but not widely practised. Similar discussions in the UK showed mainly ignorance of but sometimes marked hostility to the technique. A 'straw poll' of 50 UK hospitals (Table 1) showed that the technique was little tried but accident and emergency physicians were more aware of its existence than paediatricians, though less likely to fill in your questionnaire. Opinion as to its future use was very mixed.

This issue publicises probably the first British experimental findings with this technique and they confirm that drugs and fluid will reach the circulation through this route. We have no clinical experience ourselves but are surprised that published literature to date makes no reference to patient discomfort. Infection is reported to be rare but is related to the length of time the catheter is *in situ* and the osmolality of the transfused fluid. The risk of infection is least when infusion of crystalloid is carried out under aseptic conditions and rapidly replaced by a conventional 'drip'.

**Table 1** Intraosseous infusion: experience of UK clinicians\*

	Paeds (40)			A & E (29)		
	+	-	±	+	-	±
Aware of it?	1	39	0	1	28	0
Ever tried it?	7	33	0	19	10	0
Any future place?	9	15	16	8	9	12

\* Total number of questionnaires = 50.

Intravenous infusion is the technique of choice for the rapid replacement of fluid in children. However, when there is a delay or difficulty in securing this route then the emergency physician must have knowledge of alternative, albeit temporary, procedures. The intra-tracheal route is useful for certain drugs and the intraosseous route will deliver fluid. It cannot be considered to be routine but it must be considered.

## THE JOURNAL

Contributions to the journal are grouped under various headings, the most recent which is the 'Guest Editorial'. There are people within the profession who have wide expertise on a particular problem and the guest editorial provides a forum for them to express their own views and review the literature. In a journal endeavouring to promote scientific research, such articles need to be grouped separately. Similarly, when authors submit papers which either contain a small amount of information or a point of interest but no experimental data then the medium of a 'Letter to the Editor' seems appropriate.

## TOE NAILS

Some topics may not be considered germane to the speciality of accident and emergency medicine. One such condition is ingrown toe nails. However, we continue to receive papers on this subject and, clearly, the condition is frequently treated in the accident and emergency department. In this issue, there is a paper on this subject which, in addition to reporting the results of a particular treatment, also describes the work of a clinic in which a medical practitioner and chiropodist work side by side. There are mixed views amongst doctors about such clinics, whether for toe nails or sports injuries, with a doctor and physiotherapist in attendance. It may be felt by some that power-sharing in this way is inappropriate and, certainly, the consultant, at whose door the blame may ultimately be laid, will have his views. However, the benefits from combining different experiences may outweigh the difficulties and prove ultimately to be to the patients good.

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