have dislocated hips none were first-born, and none had any abnormality of the feet or spine.

Of the four children who presented late, two were diagnosed by a radiologist as a chance finding and the other two by their general practitioners. The oldest at the time of diagnosis was aged 10 months. All four had attended the secondary screening clinic and had been considered normal at the age of three months. One further child presented at eight months with bilateral dislocations; because of a clerical error, no appointment for secondary screening had been sent.

With secondary screening we have reduced the number of late presenting cases from 2.18 per 1 000, to 0.73 per 1 000. Over a two-year period, five children whose hip dislocations were unrecognised at birth were diagnosed and treated while still young enough to have a reasonable expectation of developing a normal hip; they had all completed definitive treatment before the age of one year, and walking was not delayed. It may be that by delaying the secondary screening till the age of four months the pick-up rate might be improved, and there would still be time for successful treatment before walking age.

No benefits in any form have been received or will be received from a commercial party related directly or indirectly to the subject of this article.

REFERENCES

TRAUMATIC HEMIPELVECTOMY WITHOUT VISCERAL INJURY

JONATHAN S. WAND

There are relatively few reported cases of survival following traumatic hemipelvectomy. The injury is associated with a combination of urological, gastrointestinal and peritoneal injuries (Moore et al 1987). This present report describes a patient in whom an extraperitoneal plane of cleavage developed without visceral injury.

Case report. A 19-year-old motorcyclist collided with a car and then with a lamppost. He sustained a fracture of his right tibia and fibula and an almost complete separation of his right lower limb from the pelvis. The limb was attached to the trunk only by a small skin bridge and part of the gluteus maximus. The peritoneum was exposed but intact and there was no visceral injury. There were no pelvic fractures. The rectal sphincters were exposed and undamaged. There was no injury to either the urinary tract or to the genitalia, save for a skin laceration extending into the scrotum. Initial haemorrhage had been controlled by the ambulance crew clamping the external iliac vessels digitally through the wound.

Thirteen units of blood and six litres of crystalloid were given during the first 24 hours. At operation, all the neurological and vascular structures to the right lower limb were seen to have been severed, and in view of the patient's general condition and the degree of contamination of the wound, the traumatic partial amputation was completed (Fig. 1). Following wound toilet and debridement the wound was packed. No laparotomy or defunctioning colostomy were performed. A catheter was passed and drained clear urine. At six days the wound was clean and a delayed primary closure was performed. On the tenth postoperative day there was a partial wound

J. S. Wand, BSc, FRCS, Senior Registrar
Queen Mary's University Hospital, Roehampton Lane, London SW15, England.
Correspondence to Mr J. S. Wand at 6 Orchard Mews, Southgate Grove, London N1 5BS.

© 1990 British Editorial Society of Bone and Joint Surgery
0301-620X/90/2R61 $2.00
dehiscence with discharge of pus containing \textit{E. coli}. The wound infection was successfully treated by drainage and intravenous Gentamicin therapy. At five weeks he was discharged from hospital; he was able to walk with crutches and was continent of urine and faeces.

At review four years later he was a successful graphics designer and, while he was able to walk unaided with his artificial limb, he preferred to use crutches. He continued to experience occasional phantom limb pains but reported no sexual dysfunction.

**Discussion.** Previous case reports of traumatic hemipelvectomy have noted the need for immediate control of haemorrhage and early resuscitation of the patient (Ikpeme and Craig 1987; Moore et al 1987; Klasen and Ten Duis 1989). The life of this man was saved by the prompt action of the ambulance crew in compressing the severed iliac vessels between finger and thumb. The second major determinant of survival is the association with other injuries. There has been an associated injury to either the genitalia, rectum, peritoneum or the intraperitoneal viscera in most of the cases so far reported. Klasen and Ten Duis (1989) reported a seven-year-old boy who sustained a traumatic hemipelvectomy, in whom the only visceral or urological injury was to the left testicle. McPherson (1960) reported a patient without visceral injury but treatment included a defunctioning colostomy. The present case healed without major septic complications and without the need for a colostomy.

The absence of visceral injury in this case may be attributed to the mechanism of injury. As the right lower leg hit the lamp post the patient sustained an open fracture of his tibia and fibula. The lower leg "wrapped itself" around the lamp post, and a massive traction abdication force was applied to the pelvis as his body continued to move forwards under its own momentum. Maull, Sachatello and Ernst (1977) stated that in such injuries, the soft-tissue damage probably starts as a deep tear in the perineum which extends posteriorly to rupture the levator ani and occasionally the pelvic viscera. The absence of a rectal injury in this patient implies that the injury to the levator ani occurred at the site of its pelvic attachment (Berman and Tom 1974). Following the diastasis of the symphysis pubis, the hemipelvis hinged on the sacroiliac joint, creating a retroperitoneal plane of separation before finally rupturing the sacro-iliac ligaments.

I would like to thank Mr J. R. R. Wenger and Mr M. Prinn of Harold Wood Hospital for allowing me to report this case.

No benefits in any form have been received or will be received from a commercial party related directly or indirectly to the subject of this article.

**REFERENCES**


---

**STERNAL OSTEOMYELITIS IN DRUG ADDICTS**

**KENT L. BOLL, ANNE G. JURIK**

Infectious complications play a major role in the morbidity and mortality of drug addicts. We describe osteomyelitis of the sternum with concomitant fracture in two drug addicts and discuss the procedures available to establish the diagnosis.

**Case 1.** A 33-year-old drug addict was admitted with a one-week history of pain in the chest. Four weeks earlier he had been fighting and was struck in the chest, but the chest pain had soon subsided. On examination he had a tender, fluctuant mass in front of the body of the sternum. He was afebrile, had a normal haemoglobin and a white cell count of $14.1 \times 10^9$/l; the ESR was 73 mm/hr. Radiography, including CT, revealed a transverse fracture of the body of the sternum, with no callus, but with marked soft-tissue swelling and a small hydrothorax. The abscess was drained; on culture it grew \textit{Staphylococcus aureus}, and he was treated with methicillin. Recovery was uneventful, and at follow-up three months later he had no pain; radiographs showed union of the fracture and bony destruction.

**Case 2.** A 28-year-old man, who had been addicted to narcotics for five years, was admitted with a four-day history of chest pain and fever. Six weeks earlier he had been assaulted, but had not had any chest pain. On examination he had a tender soft-tissue swelling in front of the sternum. His temperature was 37.6°C, the white