DERMAL SINUSES AND INFECTED INTRA-SPINAL DERMOID CYSTS

A Report of Three Cases

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SUMMARY: Three children with lumbar dermal sinuses and infected intra-spinal dermoid cysts were seen in one year at the British Military Hospital, Singapore. One of the children presented as a recurrent meningitis. The need for investigation of these cases by cisternal air myelography is stressed.

Case Reports

Case 1.

C.B.C. Born 3 August 1967. This Gurkha boy was referred at the age of 18 months with a small "abscess" over the lower lumbar spine, and a history of reluctance to walk for some days previously. On admission he had a pyrexia of 100°F. Clinical examination revealed only a skin dimple in the midline over L5. No signs of meningitis were elicited. The white cell count was 14,800 per mm³, neutrophils 70 per cent and the E.S.R. was 72 mm in 1 hour. Blood urine and stool cultures were negative. Widal and Heaf tests were negative. Chest X-ray was normal. X-ray of the lumbar spine showed a spina bifida occulta of L5. Lumbar puncture produced a small amount of thick pus from which *Staphylococcus aureus* was isolated. As he had no clinical signs of meningitis lumbar puncture was repeated 2 spaces higher and again only pus, from caret which *Staphylococcus aureus* was cultured, was obtained. Surgical exploration revealed that the dermal sinus was associated with an infected dermoid cyst within the spinal canal. The upper limit could not be defined but as much of the cyst as possible was removed. The dura appeared to have been compressed by the cyst and after operation the boy had a flaccid paraplegia with an atonic anal sphincter, and an atonic bladder and dribbling incontinence. The paraplegia recovered completely over a few months, the incontinence taking longer to improve than the limbs.

Case 2.

I.C. Born 2 October 1968. This British child was admitted at the age of 9 months with an *E. Coli* meningitis which responded completely to ampicillin. He was noted to have a skin dimple over L4-5 and X-ray of the spine showed spina bifida occulta of L4 and 5 (Fig. 1). In view of the experience with the previous child surgical exploration was requested. The sinus was traced to the spinal theca and excised but laminectomy and further exploration were not attempted. The child was re-admitted 7 weeks later with recurrence of meningitis which was complicated by the development of hydrocephalus.

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Fig. 1. X-ray photograph of Case 2 showing lumbar spina bifida occulta.

E. Coli was isolated again and responded to chloramphenicol, having become resistant to ampicillin. The boy was referred to the neurosurgical department of the Hospital for Sick Children, Great Ormond Street for further management. Surgical exploration carried out after a cisternal air myelogram disclosed a large intra dural lumbar dermoid cyst. Thin pus from the cyst grew *E. Coli*. Subsequently a ventriculo-atrial shunt was performed to relieve the hydrocephalus. At present this child's physical health is good but he has severe mental retardation.

Case 3.

A.S. Born 5 July 1968. At the age of 15 months this British child was referred to the British Military Hospital with a pyrexia having had a course of erythromycin before admission. She was irritable and had a high pitched cry. On clinical examination meningism was noted. She had a small dermal sinus overlying L4. X-ray of the lumbar spine did not demonstrate a spina bifida. Lumbar puncture produced pus from which *E. Coli* was cultured. She was treated as a meningitis and when she had improved clinically was transferred to the neurosurgical department of the Hospital for Sick Children, Great Ormond Street. Cisternal tap showed a c.s.f. protein of 80 mg/100 ml, sugar 35 mg/100 ml, chloride 640 mg/100 ml and cells 107 mm³, 98 per cent mononuclears. The c.s.f. culture was sterile. A cisternal air myelogram suggested a complete block at the lumbar level. At surgical exploration L5 had a bifid lamina and laminectomy of L3, 4, 5 exposed an intra-dural dermoid cyst which had an extension to the dermal sinus. The child's subsequent course was satisfactory.

Comment

These cases illustrate the importance of a dermal sinus in the lower back in association with spina bifida occulta, as the combination suggests the possibility of the

sinus communicating with an intra-spinal dermoid cyst. If infection develops in the sinus investigation by cisternal air myelogram and surgical exploration would appear obligatory. Till (1969) makes a distinction between the postanal dimple and a dimple at a higher level than the sacrum. He states that the latter is more likely to be a dermal sinus which may end blindly or may run through the cleft in a spina bifida to a dermoid cyst within the spinal canal, whereas the postanal dimple may continue as a fibrous band to become attached to the dura in the sacral canal and thence to an elongated conus. He suggests that the postanal dimple is not evidence of deeper abnormality but should be regarded as evidence supporting further clinical investigation only when other clinical findings are present. In his papers on spinal dysraphism under which term, by definition, intra-spinal dermoid cysts are included (Figs. 2 and 3), Till (1968, 1969)

Fig. 2. High lumbar dimple.

(Reproduced from *Develop. Med. Child. Neurol.* (1968) 10, 470-477)

Fig. 3. Cross-section showing dermal sinus, cyst and medullary abscess.

(Reproduced from *Develop. Med. Child. Neurol.* (1968) 10, 470-477)

describes the technique of cisternal air myelography and the indications for operation, and he advocates spinal exploration in a child with a midline dimple and recurrent meningitis even though the myelogram is normal.

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Brigadier F. A. E. Crew

Our readers will have noted with regret the recent death of Brigadier F. A. E. Crew, T.D., F.R.S. and will have read the very eloquent tributes paid to him in both the lay and medical press. We as a Corps are particularly grateful to him for the splendid volumes on the Army Medical Services which he produced for the Official History of the Second World War. This achievement is indeed a most fitting and lasting memorial to a Territorial Medical Officer for 40 years service.