Subcutaneous Cranial Migration Of A Ventriculo-Peritoneal Shunt

SAİM KAZAN, CEM AÇIKBAŞ, RECAİ TUNCER, METE SAVEREN

Department of Neurosurgery, Faculty of Medicine, Akdeniz University, Antalya Turkey

LETTER TO THE EDITOR

We read with interest the article by Fransen PP et al, about subcutaneous cranial migration of a ventriculo-peritoneal shunt (Fransen PP, Kevenk U, Thauvoy C: Turkish Neurosurgery 4: 38-40, 1994). We present our experience of the upward migration of a peritoneal catheter secondary to shunting because of a ventriculoperitoneal shunt disconnection.

An eleven-month old baby was admitted on 22 September 1992 with a history of a ventriculoperitoneal shunt operation five months previously for hydrocephalus. On admission, the complaints were vomiting and internal deviation of the left eye. The diagnosis of constant hydrocephalus was supported by CT scan, showing marked ventricular dilatation, aquaductal stenosis and shunt malfunction due to disconnection of the ventricular catheter from the valve. An operation was undertaken and the previous right posterior parietal burr-hole and dural incision were enlarged. The ventricular catheter was found implanted into the brain tissue. The dura was repaired with lyo-dura. The system was changed to a Phoenix standard straight ventricular, closed-end peritoneal catheter with a medium pressure cruciform slit valve and carried to the right frontal burr-hole, with the ventricular catheter inserted into the right frontal horn of the lateral ventricle, fixed to the skull with a curved connector and the valve placed subcutaneously in front of the previous craniectomy defect,with the peritoneal catheter passing over the repaired dura. Postoperatively the baby was in good condition and the shunt was functioning. But a subcutaneous collection began to appear at the first site. Skull X-Rays revealed, the peritoneal catheter curled up under the previous skin flap (Fig.1). A second operation was performed. The dural defect was intact without cerebrospinal fluid (CSF) leakage. The functional curled peritoneal catheter was tunelled subcutaneously, placed in the peritoneal cavity near the old skin incision at about Mc Burney's point. The postoperative course was normal and the baby was discharged on the 10 th day.

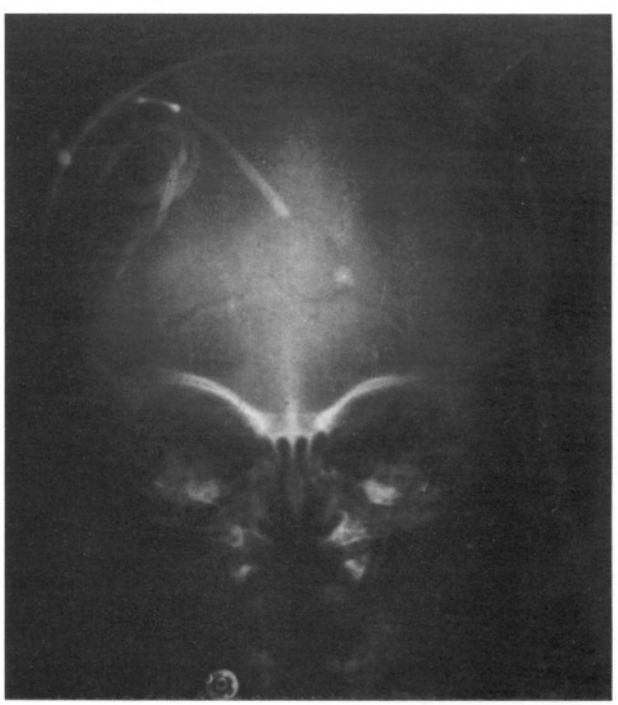

Fig. 1 : Skull X-Ray showing the migrated peritoneal catheter under the previous skin flap.

In this case,there were three confusing points. First; the CSF collection under the skin flap had no sensation of solid matter on touch as it was due to CSF coming from the open end of the peritoneal catheter aggravated by the valve pumping, second; the valve was functional, third; there was no fluid collection through the route of the peritoneal catheter which had been placed subcutaneously and also this route had the sensation of a catheter inside it by palpation but in reality it was just the trace due to the fibrotic tunnel having no catheter inside it.

Upward migration is a rare complication of ventriculoperitoneal shunts. Most were unishunts which migrated into the ventricle and the subdural space (1,2,3). Factors causing the migrations are well defined eg. negative sucking intraventricular pressure, incorrect fixation of the ends of the system, faulty handling of the baby and choice of shunt (1). Our case has reasonable additional explanations : the route of the fibrotic subcutaneous tract of the tunnel which had a slippery surface, a large subcutaneous area due to the skin flap, underlying an abnormal repaired dural slippery surface causing the peritoneal catheter to be curled up above it.

Correspondence : Saim Kazan
Akdeniz University,
Faculty of Medicine
Department of Neurosurgery,
07058 Kepez, Antalya - Turkey

REFERENCES

1. Abou el Nasr HT: Modified method for propylaxis against unishunt system complications with presentations of total intraventricular migration of unisystem ventriculoperitoneal shunt. Childs Nerv Syst 4: 116-8, 1988
2. Aranda G, Diaz V: Migracion ascendente de cateter distal de derivacion: Rev Med Panama 16:46-9, 1991
3. Thauvoy C, Kallel S, Marion B, Scholtes JL, Stroobandt: Unusual complication of peritoneal drainage: migration of a shunt in the subdural space. Childs Nerv Syst 5:47-9, 1989