Retrograde migration of ventriculoperitoneal shunt to the neck. Case report

M. Felipe-Murcia*; M.J. Almagro* and J.F. Martínez-Lage**

*Servicio Regional de Neurocirugía. Hospital Universitario Virgen de la Arrixaca. **Laboratorio de Neurología y Neurocirugía Experimental (Grupo NYNE). Facultad de Medicina. Murcia.

Summary

We report a patient, given a ventriculoperitoneal shunt at the neonatal period, who presented with a painless subcutaneous mass on his neck. Plain radiographs of the cervical region showed that the swelling was made up by a migrated and coiled peritoneal catheter. We briefly discuss the proposed mechanism for this complication and suggest that this occurrence must be taken into account at the time of evaluating a patient with shunt malfunction.

KEY WORDS: Retrograde migration of shunts. CSF shunt complications. Ventriculoperitoneal shunt. Hydrocephalus.

Case report

A 20-year-old man was seen at the Outpatient Clinic for routine review of myelomeningocele hydrocephalus after having moved to our city. Past history revealed that he had been operated, as a newborn, for myelomeningocele and given a VPS 3 weeks later. On clinical examination, a painless subcutaneous swelling was palpated on his right supraclavicular region. From this place downwards the shunt tubing could not be palpated. There were no subcutaneous collections of fluid. Plain radiographs of the CSF draining system disclosed that the swelling consisted of the shunt peritoneal catheter that appeared coiled, being the distal part of the tubing missing from its expected course (Figure). A computerized tomography scan of the head revealed slightly enlarged ventricles but without neuroimaging signs of activity of the hydrocephalus. As the patient was asymptomatic, he refused a surgical revision of the shunt. He was warned about this possibility arising in the future.

Discussion

Several unusual complications due to the dislocation of the shunts components have been reported. Even the valve
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Illustrated in several cases\textsuperscript{3,5,6,11}. To our knowledge there is only another instance of relocation of the whole shunt system in the subcutaneous tissues at the supraclavicular region\textsuperscript{6}. The proposed mechanisms to explain this upward migration of the shunt include loose or inadequate fixation of the tubing to the pericranium, lack of a reservoir, too a long catheter, faulty technique, excessive subcutaneous undermining etc.\textsuperscript{1,2,6,9,10,13}. In a recent work, Domínguez et al. report the complete coiling of an Orbis Sigma valve within the scalp of a child and attribute this occurrence to the retained "memory" of the shunt material within its sterile package\textsuperscript{3}.

In 1993, we reported three patients with symptoms of shunt malfunction that were found to have a retrograde migration of the peritoneal catheter to the subcutaneous tissues of the chest wall\textsuperscript{8}. In all three cases, as in the one that we report now, the system contained a spring-reinforced Raimondi catheter. We propose that the mechanism to explain the upward tube displacement is due to the abrupt release of the anchoring point formed by the abdominal scar around the catheter that is suddenly stretched, in this way the tube exits the abdominal cavity being unable to return to it\textsuperscript{8}. CSF pouring through the shunt, that continues functioning, further eases the tube upward movement.

The diagnosis of this complication is easily accomplished by palpation of the integrity of the drainage system and may be confirmed by shunt radiographs. We suggest that, given the multiplicity of CSF drainage systems, the possibility of shunt migration should be borne in mind in the differential diagnosis of patients presenting with symptoms and signs of shunt malfunction.

References


Figure. Plain radiograph showing subcutaneous coiling of the whole Raimondi peritoneal catheter in the patient's neck (arrows)


Correspondencia postal: Dr. Juan F. Martínez-Lage. Servicio Regional de Neurocirugía. Hospital Universitario "Virgen de la Arrixaca" El Palmar, E-30120 Murcia.