

Retained peritoneal shunt tubing causing hematuria

Case illustration

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This 14-year-old boy with congenital hydrocephalus underwent initial shunt placement shortly after birth. During his first 6 years of life, multiple ventriculoperitoneal (VP) shunt revisions were performed to address seven shunt malfunctions and one shunt infection (*Staphylococcus epidermidis*). During the last shunt revision, which took place 8 years before the current presentation, it was noted that the distal peritoneal shunt tubing (Peritoneal Catheter, Standard, Barium Impregnated; Medtronic Inc., Minneapolis, MN) had fractured and was coiled in the pelvis. Nevertheless, the tubing was not retrieved at that time.

When the boy was 11 years old, he began noticing intermittent hematuria. Ultrasonography revealed a large bladder mass, and during cystoscopy we observed that the shunt tubing was coiled within the bladder wall (Fig. 1). The procedure was converted to an exploratory laparotomy. The functioning VP shunt was found to lie within the peritoneum, and the shunt tubing that had been retained for 8 years was observed to have perforated the dome of the bladder wall multiple times. The portion of the bladder containing the tubing was excised (Fig. 2) and the bladder was oversewn. The working shunt tubing was left in the peritoneal cavity without incident.

Late bladder perforation by VP shunt tubing has been previously reported. This tubing has protruded from the urethra, been associated with bladder stones, and been observed during bladder augmentation procedures.¹⁻⁵ The present case was discovered during a workup for

hematuria after an abdominal shunt tube had been retained for longer than 8 years. Interestingly, the retained shunt tube had repeatedly perforated the bladder, which may account for the patient's intermittent hematuria.

References

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FIG. 1. Cystoscopic image of the bladder dome showing the shunt tubing perforating the bladder wall multiple times. Note the encrustations along the shunt tubing, indicating a long-standing problem.

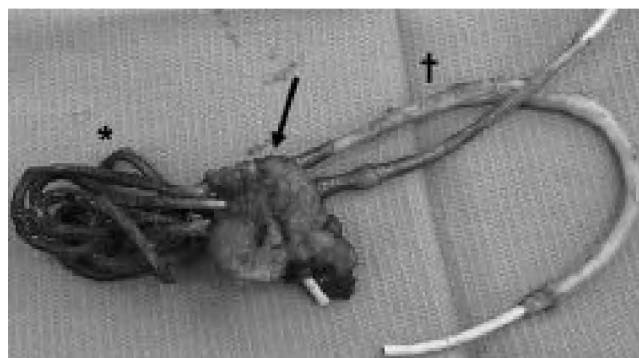


FIG. 2. Excised portion of the bladder wall (arrow) containing the shunt tubing. The retained tubing was located within both the bladder (asterisk) and the peritoneum (dagger).

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