IV.

Case of Patent Urachus over One Inch in diameter forming a Tubular Prolongation of the Bladder.*

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Mrs. M., aged 43, was admitted to the Glasgow Royal Infirmary in July 1906. She had suffered much discomfort from a complete procidentia uteri, and as mechanical appliances had failed to retain the uterus it was decided to perform a ventrofixation and colpoperineoplasty. While making the short incision midway between pubes and umbilicus, the subperitoneal fat was found to be very abundant, and this was divided as usual between two pairs of forceps until a small opening appeared in what I took to be the peritoneum. A pair of scissors was now used to enlarge this opening first upwards and then downwards. On lifting up the retroflexed uterus to the abdominal opening and thus compressing the urinary bladder, an escape of some clear fluid into the lower part of the wound aroused suspicions that something unusual had occurred, and led to a bougie being introduced into the bladder through the urethra. This instrument passed into the abdomen through a large opening.

At first I thought that in some unaccountable manner the bladder had been wounded, but an examination of the edges of the opening at the lower angle of the wound through which the bougie had passed showed only a thin fibrous-walled sac lying subperitoneally. It was now evident that what I took to be peritoneum (when the subperitoneal fat was cut through) was the wall of a patent urachus. The blade of the scissors had been introduced through an opening in the anterior wall of the urachus, and the first cut upwards had slit through the upper blind end and peritoneum into the abdominal cavity. The scissors, on being re-introduced to cut downwards, had now included peritoneum and both walls of the urachus, so that the latter was completely laid open obliquely. Had the patent urachus lain more in the median line instead of inclining to the right, and also been a little longer, the scissors might probably have only split the anterior wall, and the finger might thus have passed into its cavity instead of into the abdomen.

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The urachus is normally seen as a fibrous cord lying underneath the peritoneum, and extending from the fundus of the urinary bladder to the umbilicus. It is an embryonic remnant, and represents the obliterated upper portion of the duct of the allantois, which in the human embryo grows along the mesodermic structure known as the abdominal pedicle.

Occasionally it remains patulous, forming a tubular prolongation of the bladder which in this case extended to more than half way to the umbilicus and admitted three fingers easily. Rarely it is patulous throughout its whole extent, leading to an umbilical fistula. It has a thin outer fibrous wall, lined on its inner aspect by epithelium, and no muscle fibres exist except at the lower end, where they are derived from the muscular wall of the bladder. It will thus be understood how readily a patulous urachus can be opened without recognizing its presence, as its thin fibrous wall lying in the subperitoneal fat in the line of the usual mesial incision would be mistaken for peritoneum.

Should the urachus remain patent but be occluded at both the umbilical and vesical ends, it may become converted into a retention cyst. A number of such cysts are recorded in surgical literature,* many of them being mistaken for ovarian cystomata and their nature only discovered at operation. In one instance recorded by Reed (*Text Book of Gynæcology*, 1901, p. 805) a large cyst was formed, extending from the pubes nearly to the sternum.

The treatment adopted in the present case was, after enlarging the abdominal wound downwards, to dissect out and remove the urachus as far as its connexion with the bladder. As already stated it was found patent enough to admit three fingers (about $1\frac{1}{4}$ inches in diameter), thus forming a large opening into the conical-shaped fundus of the bladder. This opening was closed by a double layer of continuous catgut sutures, after which the uterus was fixed to the abdominal wall as originally intended and the whole abdominal wound closed.

A catheter was kept in the bladder for a week, and after its withdrawal the patient was able to retain her urine for the usual time, and suffered from no urinary discomfort.

* See reference to Weiser's monograph on Cysts of the Urachus in the *Journal of Obstetrics and Gynæcology of the British Empire*, vol. xi. p. 191, February, 1907.