**SHORT REPORTS**

**Colovesical fistula diagnosed by unconventional procedure**

Fistulous connection between the colon and the urinary tract is associated with diverticulitis and other inflammatory bowel diseases, and is managed by surgical correction of the anatomical abnormality. Many patients, however, may present with associated symptoms to physicians and nephrologists, and diagnosis depends on a high index of suspicion as well as on the results of laboratory and radiological investigations. We describe a patient who presented to the renal service with recurrent urinary tract infections and in whom an unconventional procedure confirmed the diagnosis.

**Case report**

A 63-year-old white man was referred with a six-month history of increasing left-sided flank pain, an intermittent "hiss" on micturition, suprapubic tenderness, a single episode of passing dark granular ("meaty") material per urethra, and culture-positive urinary tract infection. Six months before referral the blood urea nitrogen concentration was 5 mmol/l (14 mg/100 ml) and serum creatinine concentration 108 µmol/l (1.2 mg/100 ml). He had no history of diabetes mellitus or renal stones. Urine cultures were positive for Escherichia coli. On admission blood urea nitrogen concentration was 9 mmol/l (25 mg/100 ml) and serum creatinine concentration 243 µmol/l (2.7 mg/100 ml). Findings on renal echo, cystoscopy, and retrograde pyelogram were normal. The intravenous urogram was remarkable only for a delay in appearance of the nephrogram phase on the left side, in association with minimal left-sided calicectasis and hydroureter. He was discharged taking antibiotics. Results of tests using purified protein derivative (intermediate strength) were negative. Repeat urinalysis, after treatment with antibiotics, showed sterile pyuria.

We readmitted the patient because of subsequent recurrence of a urinary tract infection. Diverticulosis was diagnosed on the results of a barium enema examination. The day after this procedure the patient noted "the patient noted material" in his urine, an x-ray examination of an aliquot of urine showed barium (figure). Although no fistulous tract could be shown, our suspicion prompted us to perform an exploratory laparotomy, revealing a fistula between sigmoid colon and the bladder dome. The fistulous tract and the adjacent colon were excised. Subsequently all symptoms of urinary tract infections abated and his renal function has returned to normal (blood urea nitrogen concentration was 3 mmol/l (8.6 mg/100 ml) and serum creatinine concentration was 126 µmol/l (1.4 mg/100 ml)).

**Comment**

Except for the rare occurrence of a urinary tract infection with gas-forming bacteria, as with diabetes mellitus, the history of pneumaturia and fecaluria is pathognomonic for an enterourinary tract fistula. The two common causes for such fistulae are diverticular disease of the large bowel and carcinoma of the large bowel. Less commonly, fistulae have been reported with ulcerative colitis, Crohn's disease, tuberculosis, typhoid, actinomycosis, appendicitis, and in association with congenital lesions or secondary to trauma.

The incidence of the development of fistulous tracts in patients with diverticulitis ranges from 2% to 22%. The incidence is higher in men than in women (3:1), which may be due to the protective interpositioning of the uterus and adnexal structures. This is supported by the observation that the incidence of the development of such tracts in women after the menopause or after hysterectomy is equal to that of men. The techniques for confirming the diagnosis of an enterourinary tract fistula include cystoscopy, intravenous urography, barium enema x-ray examinations, proctoscopy, installation of radiocontrast materials into either the bladder or rectum, and retrieval of barium enema. To our knowledge this is the first case confirming the diagnosis by obtaining a radiograph of the urine showing barium in the bladder dome. The diagnosis may be confirmed by having the patient micturate in the bath, when pneumaturia will present as bubbles.

We suggest that when barium enema x-ray examinations fail to show an enterovesical fistula the patient’s urine should be collected for 24 hours and examined for the presence of barium in the urine. Alternatively, less viscous agents—such as Gastrografin—that may flow more readily into the fistula’s tract may also be used.


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**Simple technique for measuring serum or plasma viscosity with disposable apparatus**

The measurement of serum viscosity has long been recognised to be important in assessing multiple myeloma and related dysproteinemias. Measurement of viscosity has been finding increasing application in other diseases, particularly peripheral vascular disease, diabetes, and malignant blood diseases. Some idea of the viscosity of blood can be gauged from the packed cell volume and erythrocyte sedimentation rate. The laboratory apparatus for measuring viscosity, however, is not widely available and an assessment of viscosity may be needed urgently, particularly in patients with a paraproteinemia. A simple system of measuring serum viscosity is described which is more valuable as a rapid ward test than the previously described quick method using the red cell pipette.

**Methods and results**

A series of serum samples were taken from 49 blood donors and used to assess the reliability of the disposable system against a standard Ostwald