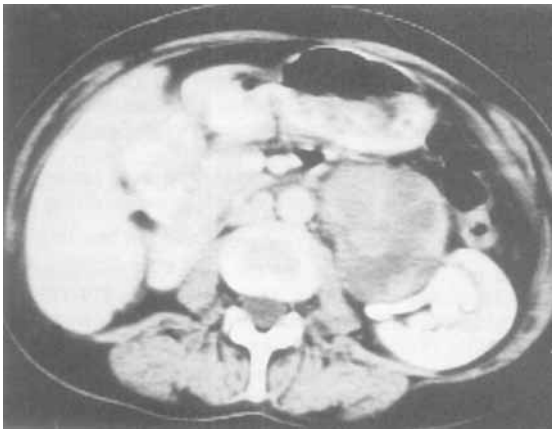

Fig.. 1 CT scan showing retroperitoneal mass of mixed attenuation causing hydronephrosis.

Comment

This is the first case report in the literature of late retroperitoneal metastasis from a granulosa cell tumour presenting with hydronephrosis. Granulosa cell tumours (GCT) account for 1.2% of ovarian cancers; 90% are stage Ia and 5% are bilateral when diagnosed (Russell and Bannatyne, 1989). Histologically, granulosa cells are round or polyhedral, with pale cytoplasm forming large islands of cells. In 50% of cases degenerate tumour cells aggregate to form the characteristic Call-Exner bodies whose presence establishes the diagnosis. GCT occur most commonly in post-menopausal women in whom treatment is abdominal hysterectomy, bilateral oophorectomy and omentectomy. The contralateral ovary may be spared in pre-menopausal patients with early (Ia) disease. These tumours are moderately radiosensitive and adjuvant radiotherapy is indicated in advanced disease or if there has been tumour spillage (Lambert and Soutter, 1989). GCT are low grade malignancies and may recur up to 20 years after the initial diagnosis, usually within the peritoneal cavity. Retroperitoneal and extra-abdominal metastases are rare. Of 118 GCT treated at the Mayo Clinic 18.6% recurred at a mean of 6 years and the longest interval to recurrence was 23 years. No retroperitoneal recurrence was seen in this series (Evans *et al.*, 1980). In diagnosing retroperitoneal tumours a history of previous ovarian surgery is always significant and GCT in particular are associated with late recurrence and good long-term survival.

References

Evans, A. T., Gaffey, T. A., Malkasian, G. D. *et al.* (1980). Clinicopathologic review of 118 granulosa and 82 theca cell tumors. *Obstet. Gynecol.*, **55**, 231–238.

Lambert, H. E. and Soutter, W. P. (1989). Ovary, vulva and vagina. In *Treatment of Cancer*, ed. Sikora, K. and Halnan, K. Pp. 549–578. London: Chapman and Hall.

Russell, P. and Bannatyne, P. (1989). Granulosa cell tumours. In *Surgical Pathology of the Ovaries*, ed. Russell, P. and Bannatyne, P. Pp. 316–332. London: Churchill Livingstone.

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Columnar Metaplasia Complicating Neurogenic Bladder in a Child

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Case Report

A newborn female presented at birth with sacrococcygeal teratoma (Fig. 1). Resection of the tumour (15 × 12 × 5 cm) resulted in progressive upper urinary tract dilatation consequent to denervation of the bladder. Diversion of the upper urinary tract was effected 7 months later by transuretero-ureteric anastomosis and a ureteric stoma. Subsquent reassessment at age 6 years documented continuing upper tract sepsis and declining renal function (isotope GFR = 37 ml/min/1.73 m^2). Grade V vesicoureteric reflux was present. Undiversion was carried out and clean intermittent self-catheterisation introduced. Reimplantation of the ureters was performed but failed to control sepsis and deterioration of renal function continued, with current GFR 15 ml/min/1.73m^2 at age 12.

A heavy and troublesome proteinaceous deposit developed coincident with the introduction of growth hormone into her management. Cystoscopy and random bladder mucosal biopsy were carried out in preparation for renal transplantation, in an attempt to characterise the deposit and locate its source. The biopsy was a mucosa-covered fragment, 6 × 3 mm. Sections showed generalised columnar metaplasia of the surface epithelium (Fig. 2) which stained positively for mucins with periodic acid Schiff after diastase, alcian blue (pH 1.5, 2.5) and high iron diamine alcian blue. The lamina propria was mildly and superficially inflamed. Whilst the macroscopic features were those of neurogenic bladder, the biopsy demonstrated columnar metaplasia as the source of the urinary mucin.

Fig. 1 Extensive sacrococcygeal teratoma undergoing spontaneous necrosis.

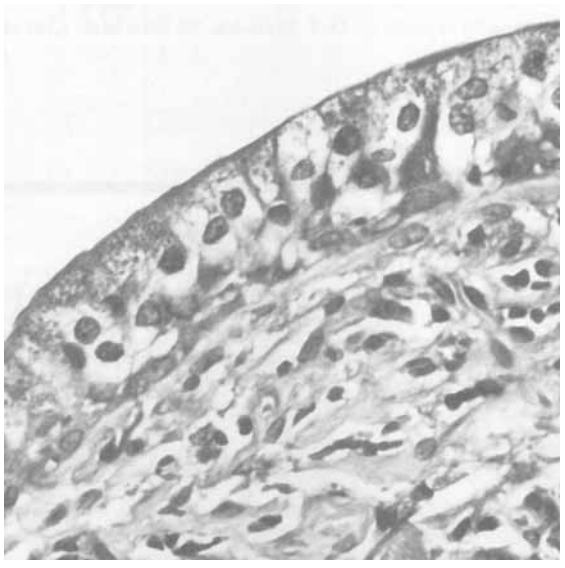

Fig. 2 Bladder mucusa from patient at 12 years of age, showing mucous metaplasia of the epithelium. There is a sparse inflammatory infiltrate, comprising mainly lymphocytes and some plasma cells, in the lamina propria (H and E × 450).

Comment

Intestinal epithelium in the urinary tract has been reproduced experimentally in response to *Escherichia coli* infection and has previously been considered a metaplastic process determined by the endodermal origin of the greater part of the bladder (Gordon, 1963). The staining pattern of the mucins is consistent with epithelium of intestinal type. Similar changes in the upper urinary tract have been found in response to calculi (Salm, 1969) and an association with bladder adenocarcinoma has been identified (Young and Parkenhurst, 1984). This latter finding influences the management of this child, which is proposed as transplantation into an ileal loop with subsequent native nephroureterectomy and staged undiversion by ileocystoplasty if reversion to transitional epithelium occurs in the bladder. Pre-emptive cystectomy will be performed should the mucinous metaplasia persist.

The combination of chronic sepsis and supravesical diversion have previously been causally associated with columnar metaplasia of the urinary bladder (Young and Parkenhurst, 1984) and both apply to our patient. We would therefore recommend early biopsy of the bladder in cases of mucinous urinary deposit to allow early diagnosis of columnar metaplasia development and an appropriate management strategy in these rare cases.

References

Gordon, A. (1963). Intestinal metaplasia of the urinary tract epithelium. *J. Pathol. Bact.*, **85**, 441–444.

Salm, R. (1969). Combined intestinal and squamous metaplasia of the renal pelvis. *J. Clin. Pathol.*, **22**, 187–191.

Young, R. H. and Parkenhurst, E. C. (1984). Mucinous adenocarcinoma of bladder. Case associated with extensive intestinal metaplasia of urothelium in patient with nonfunctioning bladder for twelve years. *Urology*, **24**, 192–195.

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Syphilis of the Ureter

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Case Report

A 71-year-old man presented with a short history of colicky loin pain and haematuria. Intravenous urography