patients undergoing dialysis were excluded and the remaining patients with uraemia compared with the controls a pronounced delay in gastric emptying was apparent (figure).

Comment

Delayed gastric emptying was shown in patients with symptomatic uraemia compared with asymptomatic controls. This abnormality may be confined to patients with uraemia not undergoing dialysis, and our observation of normal gastric emptying in three of four uraemic patients receiving dialysis confirms a previous report, which found no disturbance in gastric motility in 10 patients with renal failure undergoing haemodialysis.[3]

Possible explanations for the delay in gastric emptying include electrolyte disturbance, uraemic toxins, raised plasma concentrations of gastrointestinal hormones, and dysfunction of the autonomic nervous system. The influence of symptoms such as nausea on gastric function must also be considered as it is not clear whether delayed gastric emptying causes these symptoms or is a consequence of them.

Our finding may aid the interpretation of pharmacokinetic data in patients with uraemia and it provides a rationale for using drugs that promote gastric emptying in uraemic patients with nausea and vomiting.[4 5]

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Primary lymphoma of the anal canal presenting as perianal suppuration

Primary lymphoma of the gastrointestinal tract is well documented, but to our knowledge lymphoma arising from the anal canal has not been reported. We report on a patient with anal lymphoma presenting as perianal suppuration.

Case report

An 89 year old woman presented with a two week history of throbbing perianal pain and discharge. There were no other symptoms attributable to gastrointestinal disease, although benign gastric ulceration had been diagnosed six months previously at endoscopy. Digital examination of the rectum then had not shown any abnormality but now showed a perianal abscess to the left of the anal margin that had discharged, leaving a large ulcerated area. Proctoscopy showed ulceration within the anal canal, but sigmoidoscopy to 17 cm did not show a lesion within the rectum. After debridement a biopsy specimen of pale, firm tissue at the base of the abscess cavity was obtained. General examination did not elicit palpable lymphadenopathy, hepatomegaly, or splenomegaly. Full blood count and differential white cell count were normal, as were results of liver function tests. A chest *x* ray film was normal.

Histological examination of the biopsy specimen showed a diffusely infiltrating undifferentiated tumour composed of large cells with vesicular nuclei containing several small nucleoli and with scanty surrounding cytoplasm. Staining of paraffin sections with monoclonal antibodies to leucocyte common antigen, cytokeratin, and epithelial membrane antigen was carried out using an indirect immunoperoxidase technique.[1] The cells of the tumour expressed leucocyte common antigen but not the epithelial antigens cytokeratin or epithelial membrane antigen. The tumour was therefore diagnosed as a high grade malignant lymphoma and classified as a centroblastic lymphoma (Kiel classification) or diffuse histiocytic lymphoma (Rappaport classification).

Subsequent computed tomography of the abdomen and pelvis showed no enlargement of the lymph nodes, no masses, and a normal liver and spleen. Gastroscopy showed that the previous gastric ulcer had healed completely after treatment with cimetidine. After a course of radiotherapy, consisting of 4000 cGy (4000 rad) given in 20 fractions over four weeks, the lesion had resolved satisfactorily, and the patient was alive and well three months after treatment.

Comment

Lymphoma in the large bowel accounts for about 10% of all gastrointestinal lymphomas,[2 3] but although the rectum is the commonest site within the large bowel, no series has described primary anal disease. The patient in this report appears to have had anal lymphoma as the case satisfied criteria for primary gastrointestinal lymphoma.[4] Palpable lymphadenopathy and enlargement of lymph nodes were absent, total and differential white cell counts were normal, and although laparotomy was not performed, computed tomography did not detect further intra-abdominal disease.

The presentation of primary lymphoma as perianal suppuration is interesting in view of the recent description of lymphoma arising from lymphoid tissue associated with mucous membranes.[5] Lymphoid tissue in the anal canal is aggregated around the anal glands in the intersphincteric plane, and infection of these glands is thought to be crucial in the pathogenesis of perianal abscess. Thus blockage of the glands by neoplastic infiltration probably contributed to the clinical picture.

Initial histological diagnosis was complicated by the undifferentiated nature of this tumour, and only after immunohistochemical staining with monoclonal antibodies could lymphoma be diagnosed definitely. This highlights the importance of such studies in poorly differentiated neoplasia, and some anal tumours reported as anaplastic carcinoma on purely histological grounds might, in fact, be lymphomas. Clearly, it is important to distinguish between carcinoma and lymphoma, and we would urge the use of immunohistochemical studies when the histogenesis of any anal tumour is in doubt.

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Fatal immune haemolysis associated with nomifensine

We report a fatal haemolytic reaction after treatment with nomifensine.

Case report

A 36 year old woman was admitted to Scunthorpe General Hospital as an emergency in February 1985, having collapsed within an hour of taking one tablet of nomifensine (Merital, 100 mg). She had taken the drug previously for one week but had stopped 10 days before presentation because of dizzy spells; there was no evidence of jaundice or red urine. On admission she was conscious but uncommunicative, pale, cyanosed with shallow