On-line Case Report

A case of Sister Mary Joseph nodule associated with primary gastric lymphoma

BP Hopton¹, JI Wyatt², NS Ambrose¹

Departments of ¹General Surgery and ²Histopathology, St James's University Hospital, Leeds, UK

The Sister Mary Joseph nodule is a peri-umbilical metastasis most commonly found with adenocarcinomas of the gastrointestinal tract and ovary. It was first described 140 years ago but has not previously been reported in association with primary gastric lymphoma.

Key words: Sister Mary Joseph nodule – Gastric lymphoma

William J Mayo first referred to the periumbilical metastasis in 1928.¹ Sister Mary Joseph had been his surgical assistant at St Mary's Hospital, Rochester, Illinois from 1892 to 1908² and had brought to his notice its associated poor prognosis.

Despite having been the subject of a French language review article in 1896, which listed 48 cases the earliest from 1864,³ the sign became known as the Sister Mary Joseph nodule after inclusion in Hamilton Bailey's text book in 1949.⁴

It is an occasional sign of advanced intra-abdominal malignancy, and is normally associated with adenocarcinomas of the stomach, ovary and colon. It has also been described with adenocarcinomas of the pancreas, endometrium and breast as well as malignant peritoneal mesothelioma,⁵ but there are no previous reports involving primary gastric lymphoma.

Case report

A 78-year-old woman presented acutely with a 1-month history of vomiting and loss of appetite, with recognisable food but no bile in the vomitus. She was passing flatus and described a 1-month history of melaena stools and the loss of 3 stones in weight in one year.

Figure 1 Histology of the umbilical nodule showing sheets of large lymphoid cells forming a circumscribed mass within the dermis and subcutis. The epidermis can be seen at the top of the photograph (H&E stain: x5 magnification).

Correspondence to: Mr BP Hopton, Department of Orthopaedic Surgery, Wrightington Hospital, Hall Lane, Appley Bridge, Lancashire WN6 9EP, UK. Tel: +44 (0)1942 244000; E-mail: barny.hopton@doctors.org.uk

Figure 2 High magnification of immunohistochemistry showing diffuse high-grade non-Hodgkin's lymphoma of B-cell lineage (stained for CD20: x400 magnification).

On examination, she was anaemic and her abdomen was normal other than a firm subcutaneous nodule just superior to the umbilicus in the midline. Simple blood tests revealed a haemoglobin of 7.9 g/dl and normal white cell and platelet counts. Her sodium was 133 mmol/l, potassium 3.1 mmol/l and urea 9.4 mmol/l. A plain abdominal radiograph merely showed a large air bubble in the gastric fundus.

The diagnosis of malignant gastric outlet obstruction with a Sister Mary Joseph nodule was made and the patient resuscitated and started on total parenteral nutrition.

Endoscopy revealed a large ulcerating tumour occluding the gastric antrum, but biopsies showed only granulation tissue. Ultrasound scanning showed a grossly dilated stomach, multiple liver metastases and portal lymphadenopathy. Later, staging computed tomography showed no mediastinal or lung metastases.

At laparotomy, a large tumour mass was found at the gastric antrum along with liver metastases and omental deposits. The subcutaneous nodule was excised and sent for histology along with gastric and omental biopsies, following which an ante-colic gastro-jejunostomy was fashioned.

All operative specimens showed diffuse infiltration by a high-grade B-cell non-Hodgkin's lymphoma (Figs 1 and 2).

Following an uneventful postoperative course, she was referred to the oncology service for adjuvant therapy, and at 1 year she remained well, in partial remission.

Discussion

Some 75% of primary gastrointestinal lymphomas are gastric in origin and these make up 5% of all gastric malignancies.

Less than 45% of primary gastric lymphomas are diagnosed prior to laparotomy⁶ and, in contrast to adenocarcinomas, surgical debulking of advanced gastric lymphoma may improve survival by reducing tumour load and by decreasing the complications of adjuvant therapy such as haemorrhage and perforation.⁷

Spread to the umbilical region is presumed to be along the lymphatics of the Falciform ligament, and when this represents metastatic gastric adenocarcinoma, the mean survival is only 3.5 months.⁸

The significance of this finding in association with non-Hodgkin's lymphoma is that the treatment of equivalent disease – Ann Arbor stage IV E – with modern chemo- and radiotherapy regimens is more effective with a 5-year survival of 55% for lymphomas of all histological types.⁷

References

1. Mayo WJ. Metastasis in cancer. *Proceedings of the staff meetings of the Mayo Clinic*. 1928; **3**: 327.
2. Clapesattle H. *The Doctors Mayo*. The University of Minnesota Press. 1941.
3. Quenu L. Du cancer secondaire de l'ombilic. *Rev Chir* 1896; **16**: 97–133.
4. Bailey HH. *Demonstrations of Physical Signs in Clinical Surgery*. Baltimore. Ed. 11. 1949.
5. Boyde AM, Attanoos RL. Sister Mary Joseph's nodule in malignant peritoneal mesothelioma. *Histopathology* 2003; **43**: 303–4.
6. Sutherland AG, Kennedy M, Anderson DN, Park KGM, Keenan RA, Davidson AI. Gastric lymphoma in Grampian Region: presentation, treatment and outcome. *J R Coll Surg Edinb* 1996; **41**: 143–7.
7. Morton JE, Leyland MJ, Vaughan Hudson G, Vaughan Hudson B, Anderson L, Bennett MH *et al*. Primary gastrointestinal non-Hodgkin's lymphoma: a review of 175 British National Lymphoma Investigation cases. *Br J Cancer* 1993; **67**: 776–82.
8. Barr H, Greenall MJ, Morris PJ, Malt RA. *Oxford Textbook of Surgery*, vol. 1. Oxford: Oxford University Press, 1994; 937.