

Multiple Port-site and Subcutaneous Metastases Following Palliative Laparoscopic Surgery for Advanced Gastric Cancer

Port-site metastasis has been a well-recognised entity in the era of laparoscopy for malignancy since it was first reported in 1978.¹ It most often occurs following laparoscopy for colonic, gall bladder and ovarian cancers. Association with gastric cancers is rare. There is a higher incidence of port-site metastasis when the tumour is manipulated. The causes are direct or indirect implantation, the metastatic nature of tumours, surgery-induced immunosuppression and hematogenous spread. The patient was a 53-year-old male, who presented with the classic features of gastric outlet obstruction. Investigations including endoscopy and biopsy were done and the patient was diagnosed to have poorly differentiated adenocarcinoma of the gastric antrum. Diagnostic laparoscopy was planned to assess resectability of the tumour. There were no peritoneal deposits or ascites. The tumour was located in the antrum involving the serosa and was posteriorly fixed to the pancreas, so a palliative laparoscopic antecolic anterior gastrojejunostomy was done. The postoperative period was uneventful. Port-site metastasis occurred in 3 of the 4 port sites, 8 weeks after surgery (Fig. 1). Subcutaneous nodules appeared close to the port-sites, 12 weeks following surgery. By this time, the tumour had fungated (Fig. 2). Port-site metastases have been extensively documented. It can occur even after the tumour has been completely resected. The first reported case of port-site metastasis occurred following laparoscopic colectomy for colonic carcinoma. To date, almost 200 cases of port-site metastases occurring after videoscopic procedures have been reported in 90 papers, out of which about 80% of cases occurred after laparoscopy for digestive tumours.² Gastric carcinoma as a cause of port-site metastasis has not been reported. It can occur any time after surgery. In our patient, the primary tumour was not resected, so the port sites did not come into contact with the malignant cells. The cause was most likely direct handling of the tumour with the instruments. Subcutaneous deposits are rare but have been reported. Resection of the port-site metastases is an option; though in this case there were multiple deposits and it would not alter the overall survival. In the majority of patients with laparoscopic port-site metastases, the implantation of exfoliated malignant cells is thought to be responsible for this. However, wound site recurrences are uncommon following open surgery, when there is the same opportunity for malignant cells to enter the circulation. Additional factors, therefore, must exist in the laparoscopic wound recurrences. Pneumoperitoneum may predispose a patient to an altered pattern of tumour growth favouring wound implantation.³ Port-site metastases are

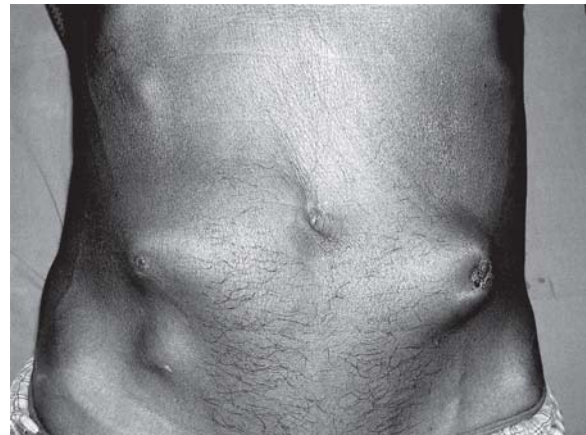


Fig. 1. Multiple port-site deposits with subcutaneous nodules.



Fig. 2. Close-up view showing early signs of fungation.

more frequent with gasless laparoscopy than with CO₂ pneumoperitoneum. In addition, malignant cells have been demonstrated to grow preferentially in areas of high cellular proliferation, such as during repair at a port-site wound.^{4,5} Local peritoneal factors could play an important role in the development of port-site metastases. The incidence of port-site metastasis can be significantly reduced by closure of the peritoneal defect, topical application of povidone-iodine to the port sites and intraperitoneal irrigation with chemotherapy solution.³⁻⁵ Ultimately, prevention is better than cure.

REFERENCES

1. Fornara P, Zacharias M, Wagner S. Port-site metastases: fact or fiction? *Urol Int* 2003;71:136-42.
2. Schaeff B, Paolucci V, Thomopoulos J. Port site recurrences after laparoscopic surgery. A review. *Dig Surg* 1998;15:124-34.

3. Neuhaus SJ, Texler M, Hewett PJ, Watson DI. Port-site metastases following laparoscopic surgery. *Br J Surg* 1998;85:735-41.
4. Wittich P, Mearadji A, Marquet RL, Bonjer JH. Irrigation of port sites: Prevention of Port Site Metastases? *J Laparoendosc Adv Surg Tech A* 2004;14:125-9.
5. Hoffstetter W, Ortega A, Chiang M, Paik P, Beart RW. Effects of topical tumoricidal agents on port-site recurrence of colon cancer: an experimental study in rats. *J Laparoendosc Adv Surg Tech* 2001;11:9-12.

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