Rectal adenocarcinoma perforation following palliative colorectal stenting

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Stenting of rectal cancers is a recognised management strategy in malignant bowel obstruction. Placement of a self-expanding metal stent can be used as a bridging measure prior to definitive surgery, or as a palliative solution to an obstructing tumour in patients not suitable for resection. However, colonic perforation is a small but significant risk associated with stent insertion, with a reported rate of 7.4% across stent recipients.[i] We present a case where a rectal stent inserted for palliation of a near obstructing rectosigmoid tumour caused perforation of the tumour and faeculent peritonitis three months following its insertion.

A 73-year-old man with a past history of prostate cancer treated with brachytherapy presented with bleeding per rectum and microcytic anaemia. Colonoscopy demonstrated a bulky tumour 25cm from the anal verge that could not be passed with the colonoscope. Histology was suspicious for invasive carcinoma. Staging CT revealed an abnormally thick-walled sigmoid with infiltration of the mesorectal fat, as well as multiple low density liver lesions consistent with metastases on MRI liver. The decision was made to peform rectosigmoid stenting prior to further investigation. A 25x120mm WallFlex Colonic (Boston Scientific) uncovered titanium alloy stent was inserted without complication.

PET scan demonstrated intense activity in the sigmoid primary, the liver metastases and a single left upper lobe metastasis. After discussion in the Lower GI Malignancy MDM, the patient proceeded to palliative chemotherapy with 5-FU and leukovorin.

Three months after stent insertion, the patient presented to his local hospital with acute abdominal pain and fever. CT scan demonstrated perisigmoid stranding associated with small locules of extraluminal gas, although gross free gas was not seen. He was transferred urgently to the quaternary centre where the stent had been inserted. On arrival he was found to be peritonitic, febrile and tachycardic, and the decision was made for laparotomy. At

operation he was found to have a perforated sigmoid, with the proximal end of the stent extruding through the defect and frank stool in the peritoneal cavity. A Hartmann's procedure was performed, with the tumour and stent removed en bloc and an end colostomy raised, followed by copious washout. His recovery was complicated by postoperative ileus and an intraabdominal collection requiring radiologically guided drainage.

Perforation is an infrequent but serious complication of colorectal stenting. An early randomised controlled trial was terminated prematurely due to stent-related morbidity,[ii] although subsequent evidence has shown comparable outcomes to defunctioning surgery.[iii] A recent meta-analysis demonstrated an overall perforation rate of 7.4% (including both bridge to surgery and palliative patients).[iv] Perforation can result from the ends of the stent penetrating the bowel wall, as here; or from tumour ingrowth causing stenosis and catastrophic proximal re-obstruction. This risk is increased with concomitant use of bevacizumab (which our patient did not receive), but not other chemotherapeutic agents.[v] Insertion technique and surgeon experience can also contribute to the likelihood of perforation.[vi]

There is considerable literature to suggest that stenting in the bridge to surgery setting is safe and viable, with one recent prospective observational multicentre study showing a perforation rate as low as 1.6%.[vii] In the palliative setting, the current retrospective data suggests that stents can be used safely with palliative chemotherapy, with a perforation rate of 8% seen in one recent review of 38 patients receiving 5-FU based chemotherapy.[viii] A recent Australian study also suggests that stenting in the palliative setting results in significantly less impact on quality of life than defunctioning surgery.[ix] Stenting does has an

established role in the management of obstructing colonic cancers, however perforation remains a potential risk of which clinicians need to be aware.

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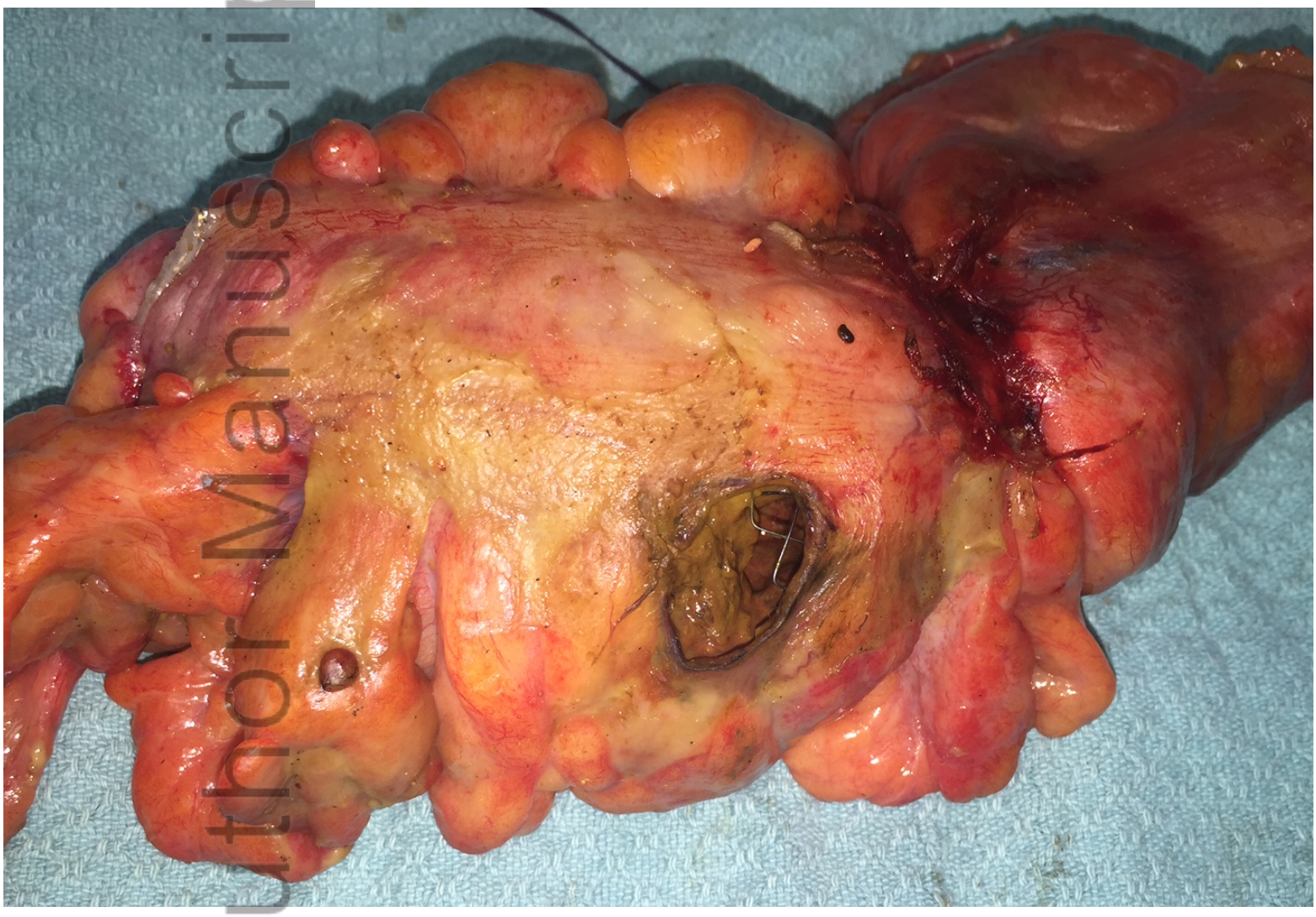
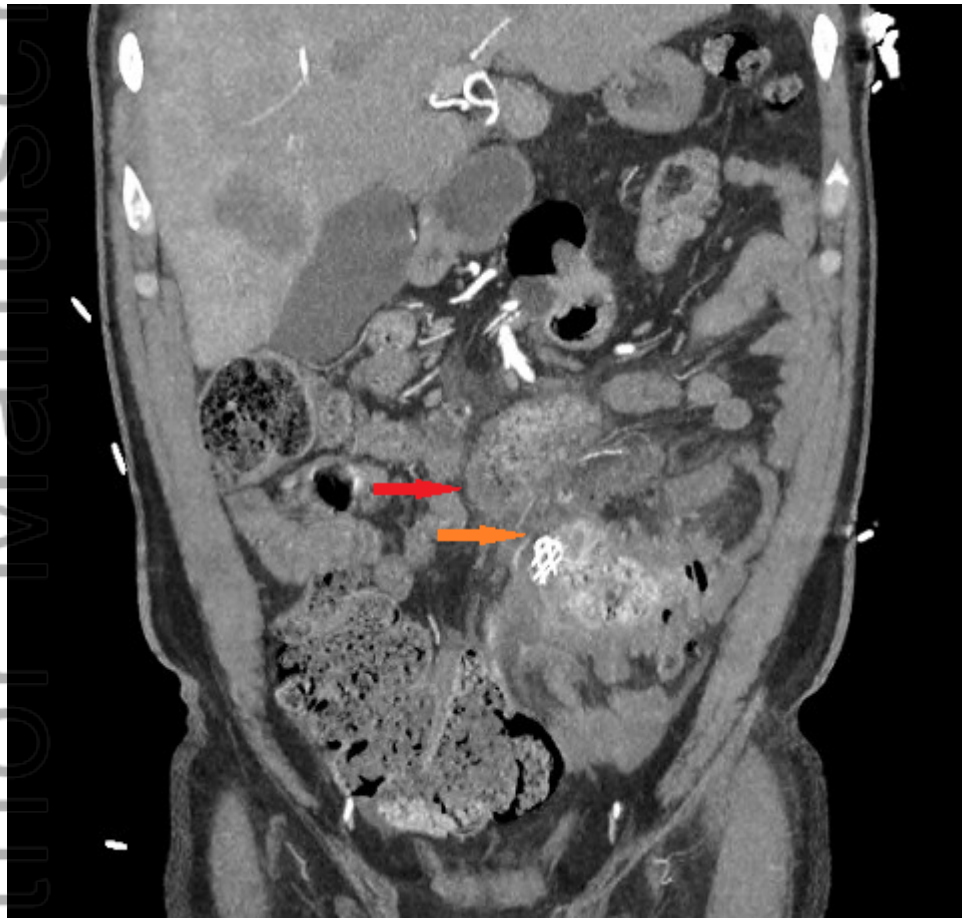


stent perf photo.tif



stent perforated annotated.tif