A Foreign Body Granuloma Mimicking a Tumor Recurrence complicating a Stapler Site after a Sigmoid Cancer Resection

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Abstract

Abstract: In this study, foreign body granuloma mimicking sigmoid cancer diagnosed on routine follow-up examination in a 70-year-old male who is a known of sigmoid cancer status post sigmoid resection. To our knowledge, this is the second case in the literature reporting a stable granuloma in the intestine indistinguishable from tumor recurrence.

KEYWORDS: granuloma, Stapler. Staple anastomosis, sigmoid resection.
**Introduction:**

Granulomatous reaction, a specific type of chronic inflammation, is characterized by aggregation of modified macrophages and stimulated by a variety of infectious and non-infectious agents. Tuberculosis, sarcoidosis, and reaction to foreign body materials are the most common etiologies reported (1,2). Inflammatory pseudo tumor is a kind of foreign body reaction due to non-absorbable nylon, silk and Dacron. Staples are manufactured from titanium which does not appear to cause inflammation in surrounding soft tissue, nor was it rejected by living tissue.

**Case report:**

A 70-year-old male known case of sigmoid cancer that underwent a sigmoid resection. With an end to end anastomosis using a size 31 EEA circular stapler. The procedure was done in March 2011. The histopathology showed an invasive adenocarcinoma, moderately differentiated. Maximum tumor diameter is 7.5 cm. Tumor invading through muscularis propria into pericolic fat. All surgical margins were negative. No perineural or lymphovascular invasion is seen. The tumor arise in a background of tubular adenoma, additional three tubular adenomas in adjacent mucosa were identified. One out of 12 lymph nodes were positive for metastasis (1/12). Harvested, Para-aortic lymph nodes showed necrotizing granulomatas lymphadenitis suggestive of TB and this was confirmed by PCR. The patient’s case was discussed in the Tumor Board meeting and the plan was to treat the tuberculosis first and follow-up the patient in the Surgery Clinic. One month after discharge, the patient started to complain of rectal bleeding. Multi-axial CT scan of the abdomen and pelvis with oral and IV contrast, showed persistent tiny hypo density at the dome of the liver (best seen in Porto-venous phase). The lesion appears non specific since it becomes hardly seen on late liver phases. No other hepatic lesions seen. Redemonstration of the previously seen, slightly enlarged, porto-cavalnode, best seen at the level of the celiac trunk. The lower abdominal cuts reveal intraluminal soft tissue mass at the colonic anastomosis. It measures 2.3 x 1.6 cm (Figure 1).
Figure 1, intra luminal soft tissue mass at the colonic anastomosis

The colonoscopy showed at 20 cm from the anal verge, a large fungating mass about 3x5 cm fully covered with exudative material. The scope was retroflexed and the mass is attached to the colonic wall. Another broad base polypoied lesion was seen at the rectum. (Figure 2). Biopsy was taken and showed necrotic and granulation tissue with ulceration and acute inflammatory exudates and focal foreign body reaction. No evidence of malignancy (Figure 3).

Figure 2, the colonoscopy showed fungating mass 20 cm from the anal verge.
The biopsy was negative for Acid fast bacilli culture and DNA. Colonoscopy was repeated in December which showed 1 sessile polyp(s) at the rectum, the largest measuring 35 mm. Excision was incomplete by endoscopic criteria. The polyp(s) was retrieved. The polyp was at previous anastomotic site at colo-rectal area (Figure 4). Majority of this polyp was removed for biopsy purpose, only the base of the polyp was left behind. The polyp was approximately 15 cm from the anal verge. There was a second polyp in low rectum at about 7 cm from the anal verge. This was sessile, about 5 mm in diameter.

**Figure 3, necrotic and granulation tissue with ulceration and acute inflammatory exudates.**

**Figure 4, the colonoscopy showed sessile polyp(s) at the rectum, the largest measuring 35 mm. it was 15 cm from the anal verge.**
This polyp was biopsied. It showed ulceration with granulation tissue, chronic inflammation and fibrosis with bacterial colonies, negative for malignancy and for TB. Lower rectal polyp biopsy showed tubular adenoma (Figure 5).

**Figure 5, lower rectal polyp biopsy showed tubular adenoma.**

**Discussion:**

Those days Staplers are commonly used to perform gastrointestinal anastomosis. They have comparable results with sutured anastomosis in terms of mortality, anastomotic dehiscence and wound infection (3). The only difference being the rate of stricture formation at anastomotic site. It is higher after stapled compared to hand sewn anastomosis for colorectal anastomosis (3). Granulomas of the GI tract can mimic malignant tumours in many ways, clinically, radiologically and sometimes grossly (1,2). There are different causes of foreign body granuloma post abdominal surgery. The causative agent in foreign body granulomas may be suture material, sponge used during surgery or pieces of wood or glasses introduced during trauma (2). Stitch granuloma has been reported in the past (4,5,6). Shaufffer et al demonstrated suture granuloma simulating recurrence colonic tumor at the site of anastomosis (5). In 2009 another two cases had been reported by Kim et al which represent lesions that create imaging findings were confused with a malignant lesion (6). As we can see after reviewing the literature the risk of developing granuloma at the suture line post colorectal resection for carcinoma is quite well known. Granuloma formation at the site of stable line is relatively unknown complication for the usage of the staples especially in the colorectal area because it made from Titanium which considered to be inert to human tissue and thus unlikely to cause a foreign body reaction (7). There are few case reports of foreign body reaction and granuloma formation in lungs possibly due to previous surgical staples (7,8).

In conclusion, stable granuloma of the colorectal area although it is rare, may cause diagnostic challenges, especially in patients with a history of malignancy because of similar findings with recurrence. Biopsy may indicate in these cases to rule out malignancy which can be difficult due to the proximity to staple line. Surgeon should be aware of this complication and the different option of managing it.
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References:


