

Case report

Bone in intestinal polyp-a curious observation

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Abstract

We report rare phenomena of ossification in benign colon polyp. An adult woman presented with occasional bleeding per rectum for which she was investigated. A polypoid rectal swelling was detected and histopathology revealed an inflammatory polyp with osteoid formation. The case is presented for its rarity and available literature is reviewed.

Key words: osseous metaplasia, intestinal polyp, rectum.

Introduction

Metaplastic bone formation is an uncommon finding in benign and malignant gastrointestinal tumors. It also has been described in neoplasms outside the gastrointestinal tract. It is an extremely rare phenomenon and only 8 well documented cases of osseous metaplasia in benign non neoplastic polyp were identified on internet search. Details of six cases were available. We describe here such a case and also review available literature.

Case report

A 42 year old woman gave the history of occasional bleeding per rectum and something hard felt during washing after defecation. She was investigated and a polypoid hard swelling was detected on per rectal examination. It was surgically excised and the specimen was sent to the Department of Pathology for histopathological evaluation. On gross examination;

it was a reddish sessile polypoid lesion with irregular surface 14 mm in diameter. On cutting the polyp a gritty sensation was felt. It was bisected and totally embedded. Microscopic examination of haematoxylin and eosin stained sections revealed an inflammatory polypoid lesion with focal superficial ulceration. Crypts were irregular in shape and mucin extravasation was apparent. Stroma contained congested vessels and inflammatory cells comprising of plasma cells, lymphocytes, eosinophils and neutrophils. Foci of bony trabeculae lined by osteoblasts were seen adjacent to mucinous epithelium. Hence a pathological diagnosis of an inflammatory polyp with osseous metaplasia was finally made.

On further enquiry, patient stated that she had previous a history of operation fifteen years back the details of which she had lost. She was completely asymptomatic afterwards.

Table: Summary of reported cases of osseous metaplasia in non-neoplastic polyps

Case	Author	Year	Age	Gender	Size (mm)	Location	Histology	Inflammation	Mucin deposition	Ref.
1	Sperling	1981	25	M	10	Rectum	Inflammatory polyp	+	+	[1]
2	Ohtsuki Y	1987	*	*	*	Stomach	Hyperplastic	+	+	[2]
3	Castelli	1992	22	F	10	Rectum	Inflammatory polyp	+	-	[3]
4	Groisman	1994	3	F	20	Rectum	Juvenile polyp	+	+	[4]
5	H Nakajama	1997	*	*	*	Rectum	*	*	*	[5]
6	T Nerita	2008	35	M	40	Jjejunum	Hamartomatous	+	*	[6]
7	Y.Oono	2009	39	M	12	Rectum	Inflammatory polyp	+	-	[7]
8	R ahmed	2009	15	M	10	Rectum	Juvenile polyp	+	+	[8]

* Details not available

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Discussion

Osseous metaplasia in gastrointestinal polyps is an interesting phenomenon. On literature analysis it was determined that most of the described cases in colon are in neoplastic setting mainly in adenocarcinoma or adenomas. There are total eight reported cases of non-neoplastic polyps as shown in the table below, however we could retrieve the details of only six cases. Four were male and two were females. In all the cases polyps were located in rectum except a single case report of Peutz Jeghers polyp which was present in jejunum. Average age of presentation was 23 years (range 3-39y). All the polyps were larger than 10 mm in diameter.¹⁻⁸

Three were inflammatory polyps, two juvenile polyps, and one case of Peutz Jeghers syndrome. 5 lesions demonstrated mucin deposition. In most of the cases osseous metaplasia was demonstrated close to the epithelium. The current case was diagnosed as inflammatory polyp and mucin extravasations' was also present.

The precise pathogenesis for this condition still remains unknown. However, current studies done on rectal cancer propose over-expression of Bone Morphogenic Proteins by tumor cells, inducing the differentiation of surrounding pluripotent mesenchymal cells into osteoblasts⁹. According to Rhone and Horowitz¹⁰ heterotopic ossification occurs due to metaplasia of fibroblasts which is induced by factors

released from rapidly dividing epithelial cells of the tumor or by direct contact with epithelial cells of the tumor. In some previous studies histologically both benign and malignant lesions were commonly seen with presence of mucin production and extravasation¹¹⁻¹².

However, in non neoplastic polyps, osteogenic stimulation is considered to be the result of inflammatory process as inflammatory infiltrate is seen alongside the area of inflammation.¹

From the review of the literature, we found that all of the polyps were larger than 10 mm in diameter, most of them showed inflammatory changes, and were detected in the rectum. In current case also; polyp was located in the rectum, and showed marked inflammatory reaction. Mucin extravasations were also notable. The pathogenesis could, therefore, be a reactive metaplastic change stimulated by the repeated local trauma and reparative response to an inflammatory process and possibly mucin has some role. But rarity of the phenomena precludes the chance for a larger study to determine the actual cause.

Conclusion

Identification of metaplastic bone formation in colonic polyps is a rare event. A reactive response to chronic inflammation and repair may be suggested as an etiology for its occurrence. Though a pathologist's curiosity, clinically, its significance need to be determined.

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