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Benign anal and perianal polypoid neoplasms and tumor-like lesions

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ABSTRACT

Mesenchymal anal and perianal tumors are relatively uncommon. The majority are malignant. Benign mesenchymal anal tumors are rare. Some are common stromal neoplasms, but with the rare presentation as anal polyps. Other lesions are rare, but unique to the anal/perianal region. Common keratinous cysts might uncommonly present as anal polyps, while other rare cysts are unique to the anogenital region.

A retrospective review study of 493 anal and perianal specimens conducted over seven years showed twenty cases (4.0%) of benign anal polypoid lesions. We excluded the usual fibroepithelial polyps, anal tags, papilla, hemorrhoids and warts. We found six cysts, three lipomas, two papillary hidradenomas, two melanocytic nevi, one hamartoma, one xanthogranuloma, one seborrheic keratosis, one hematoma, one fibrous histiocytoma, one granular cell tumor and one lymphangioma. The male to female ratio was 1.5:1. They were found in adults (mean age 37.8 years) and in infants (mean age 2.4 years). In general, they were smaller than 2 cm. They were either asymptomatic or presented with anal pain, bleeding or lumps. Some were clinically confused with the more common non-neoplastic anal tags, hemorrhoids and fibroepithelial polyps/papilla. A variety of common and rare benign lesions might present as anal polyps with important surgical and pathologic challenges and implications.

Introduction

Mesenchymal tumors of the anal canal and perianal region are relatively rare. The majority are malignant [12,13]. Benign mesenchymal tumors are even rarer clinical and pathologic findings [9,27]. Non-epithelial non-mesenchymal neoplasms and tumor-like lesions of the anal/perianal region are also uncommon findings. Both encompass a variety of neoplastic and nonneoplastic mesenchymal and non-mesenchymal lesions. Some, for example, leiomyomas, granular cell tumors and lipomas, are common neoplasms, but with the rare presentation as anal polyps [1,15,17]. Others, for example, papillary hidradenomas, are unique to the perianal region [7]. These lesions can be confused clinically with the common non-neoplastic causes of anal polyps, for example, anal tags, hemorrhoids and fibroepithelial polyps [8]. This might result in inappropriate management of these neoplasms with the risk of local recurrence. Some might present diagnostic challenges to the novice pathologists. Common epidermoid cysts might unusually present as anal polyps, while other rare developmental cysts are restricted to the perianal region [4,16,20,21]. We aimed to review the prevalence, distribution and the clinical and pathologic importance of benign anal polypoid neoplasms and tumor-like lesions.

In our institution, a retrospective review study confirmed the relative rarity of these benign polypoid lesions of the anal canal and the perianal region with an estimated prevalence of 4.0%. It also highlighted the relatively wide spectrum of lesions that could involve the anal and perianal regions. Even though some of these lesions were benign nonneoplastic lesions, most were clinically important for the subsequent management of patients because they were neoplasms with the potential risk of local recurrence. In addition, some may present diagnostic challenges to the unwary pathologists.

Materials and methods

A retrospective review study of 387 anal specimens and 106 perianal specimens was conducted over seven years from May 2005 to May 2012. Anal and perianal specimens that were removed for symptomatic anal lesions, as well as those removed as part of lower abdominoperineal resection, those that were incidental findings during routine colonoscopy or pediatric examination for suspected Hirschsprung disease, or incidentally discovered by patients or by their mothers, were collected and reviewed. A computer retrieval

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search was used to collect anal specimens that were clinically and grossly labeled as polyps, polypoid, nodule, swelling, mass, papule or wart. The inclusion criteria were lesions arising from the anal canal from the anal verge to 2 cm above the dentate line, as well as from the perianal skin of the anal margin, but the perineum skin was excluded. Lesions from the rectum proper were excluded. Malignant epithelial neoplasms, malignant melanocytic neoplasms and malignant mesenchymal tumors were excluded. The usual anal tags associated with anal fissures, fibroepithelial polyps, and hypertrophic papilla and inflammatory cloacogenic polyps were excluded, as well as hemorrhoids and viral warts. Anal or perianal inflammatory mass lesions secondary to abscess formation, fissures and fistulas were also excluded from the study. Polypoid anal lesions due to secondary metastases of known primary carcinomas or due to extension from rectum, prostate or female reproductive tract, as well as due to lymphomas and leukemias, were excluded.

For each collected case, the gross appearance of cut-surface of the specimen, including the size, was recorded. Sections of 4–6 μm thickness were stained with routine hematoxylin and eosin (H&E) stain. Serial sections with multiple deeper levels for each block were performed if necessary. All the H&E slides for each collected case were reviewed. Special stains, for example periodic acid Schiff (PAS), Alcian blue, Masson trichrome, and immunohistochemistry (IHC) study for vimentin, smooth muscle actin (SMA), desmin, S100, CD68, CD117, CD34, ALK, HMB45 and cytokeratin (CK) were performed as directed by the H&E slides examination and as appropriate for the diagnosis of certain cases.

The age, gender, the clinical data regarding the presentation of the anal polypoid lesions, including the pre-operative clinical impression, as well as follow up data (when available) and any associated lesions, whether local or systemic, were collected. The topographical localization of each lesion in relation to the different zones of the anal canal was recorded.

Results

Of the total 493 anal and perianal specimens, twenty cases (4.0%) showed different types of anal and perianal polypoid neoplasms and tumor-like lesions. We found seven anal cases out of 387 anal specimens and thirteen perianal cases out of 106 perianal specimens. The age range was between 1.6 and 56 years with a mean age of 32.5 years. Three cases were in infants with an average age of 2.4 years. The remaining seventeen cases were found in young and middle-aged adults with an average age of 37.8 years. We did not find similar cases between the age 3 and 20, even though 18 patients within this age range had the usual anal/perianal lesions, for example fibroepithelial polyps, warts, papilla, anal tags, fissures and fistulas. In addition, we found ten infants, apart from our three cases, below the age of 3 with the usual anal polyps. The male to female ratio was 1.2–1 (12 males to 8 females). For the total 493 specimens, the male to female ratio was 2.3–1 (345 males to 148 females). Ten cases presented as asymptomatic polyps or lumps, and ten presented with pain, discomfort, tenderness, bleeding and discharge (Table 1). The duration of the presentation ranged from days to weeks to months in most cases and only few for years depending on the symptoms. Clinically, most were diagnosed as anal tags or the usual anal polyps, while others were labeled as hemorrhoids or abscess. Most of the cysts were correctly labeled as cysts. None of the twenty collected cases were found in the specimens retrieved from abdominoperineal resections, during routine colonoscopy, or during pediatric examination for suspected Hirschsprung disease. They were either clinically symptomatic, presented as palpable polypoid lumps or were incidentally discovered by the parents. Three cases involved the middle transitional zone, three the lower anal canal/anal verge area and one involved the upper anal canal zone. Six cases involved the left perianal region, four the midline perianal skin and three the right perianal region. The gross appearance was variable according to the type of each lesion (Table 1). The size ranged between 0.4 and 3.0 cm with an average size of 1.2 cm. Follow-up data were available for fifteen cases with a follow-up period that ranged between two months and six years with average of 2.2 years. These cases had an uneventful clinical follow-up, and no local recurrence occurred after complete excision of the lesions. Two cases (cases 11 and 14) had coexistent viral warts and anal fistulas. The other cases were solitary and did not have any associated lesions.

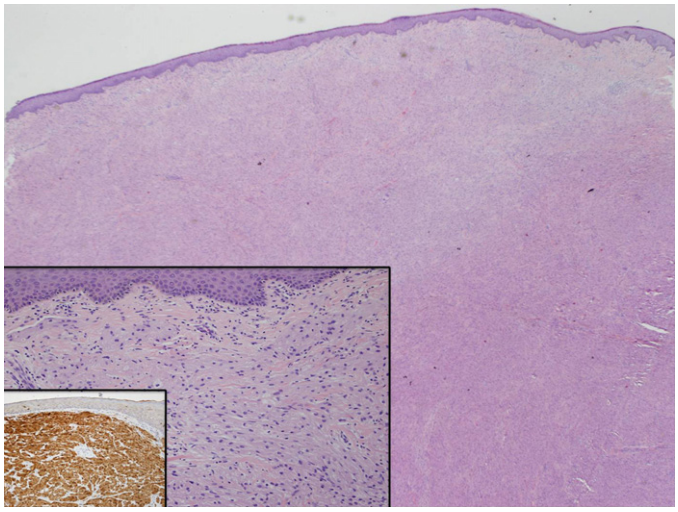

Fig. 1. Diffuse solid sheets of proliferating neoplastic cells replace the dermis with hyperplastic acanthosis of the overlying epidermis (hematoxylin and eosin stain (H&E), original magnification 20×). Inset shows sheets and nests of mononuclear cells with abundant eosinophilic granular cytoplasm and bland nuclei (H&E, 200×). Inner inset shows strong and diffuse staining for S100 (Dako, S100, 200×).

Case 1 showed histologic features of granular cell tumor with infiltration and expansion of the dermis by large cells with characteristic eosinophilic granular cytoplasm. These cells were strongly and diffusely positive for S100 (Fig. 1). CD68, HMB45, CD117 and CK were negative. Case 2 showed a polyp of the anal transitional zone (ATZ) mucosa with marked hemorrhage and edema of the underlying stroma (Fig. 2). No evidence of dilated piles or ruptured vessels

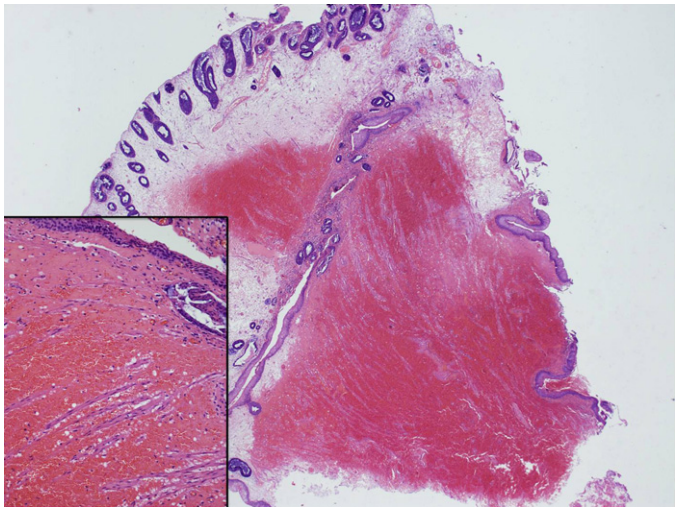

Fig. 2. A polyp of the transitional zone with massive hemorrhage and edema of the stroma. (H&E, 20×). Inset shows hemorrhage dissecting through the smooth muscle fibers (H&E, 200×).