Bizarre Stromal Cells in Lower Oesophageal Polyps Mimicking Malignancy: A Case Report

Latifa Almusalam MD* Sarah Almaiman MD**

ABSTRACT

Bizarre stromal cells are characterized by the presence of reactive hyperchromatic atypical cells in inflamed stroma, which can be misdiagnosed for malignancy or infectious process. It is found in various organs and is most common in the gastrointestinal system. It is pivotal to recognize the benign features of bizarre stromal cells using histology and immunohistochemistry to avoid unnecessary major treatment. We present a case of a forty-six-year-old man with epigastric pain. An endoscopy was performed, and a small nodule was found in the lower oesophagus. The bizarre stromal cells were found, and the reactive nature of the nodule was confirmed.

INTRODUCTION

Bizarre stromal cells (BSCs) represent an important differential pitfall, as they are characterized by the presence of spindled/epithelioid cells with enlarged hyperchromatic nuclei within inflamed stroma[1]; which can resemble a malignant condition or a CMV infection[2]. BSCs have been identified in various organs which include the gastrointestinal tract, breast, genitourinary tract, pelvis[3] and endometrium[4]. Here we report a case of oesophageal BSCs associated with polyps, with an emphasis on histological and immunohistochemical features in order to correctly identify it as a reactive lesion.

CASE REPORT

A 46-year-old man with no significant medical or surgical history presented with epigastric pain; he denied any history of fever or altered bowel habits. Physical examination was unremarkable. Upper gastrointestinal endoscopy showed a small nodule just above gastro-oesophageal junction. Biopsies were obtained from the oesophagus. The oesophageal biopsy showed ulceration with acute inflammatory cell infiltrate and bizarre stromal cells (Figure 1). The stromal cells were found to be spindled, stellate and epithelioid with enlarged vesicular nuclei and prominent nucleoli (Figure 2). No mitotic figures were identified. The bizarre cells were immunoreactive for vimentin indicating its fibroblastic origin. PanCK, CD34, CMV, CK5/6, CD30 and CD68 markers were all negative. Ki67 showed low proliferative rate (3%) (Figure 3). Overall, morphology and immunostaining were suggestive of reactive atypical changes. However, a follow-up endoscopy was recommended and performed 2 weeks later, which did not show any endoscopic abnormality at the site of the previous biopsy. Two distal oesophageal mucosal swelling were also discovered and biopsied, but no histological abnormalities were present

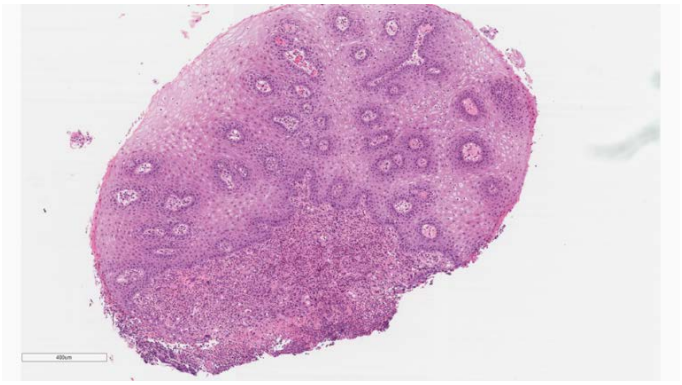

Figure 1: Scanning magnification of the oesophageal polyp

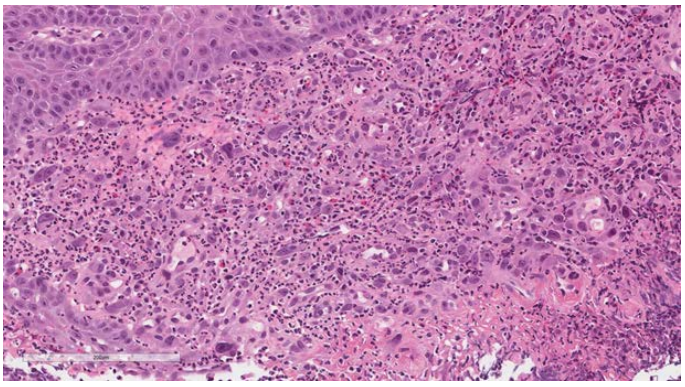

Figure 2: High-power magnification showing spindled, stellate, and epithelioid bizarre stromal cells with an enlarged vesicular nuclei and prominent nucleoli

* Senior Resident, Pathologist
Department of Pathology & Laboratory Medicine
King Abdulaziz Medical City
Saudi Arabia
E-mail: Drlatifaalmusalam@gmail.com
** Consultant, Gastrointestinal and Hepatobiliary Pathology
Department of Pathology & Laboratory Medicine

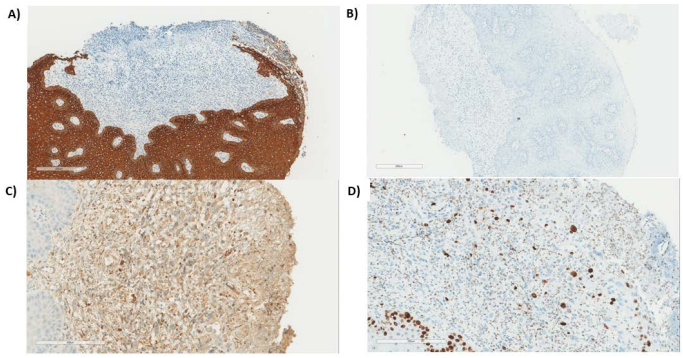

Figure 3: Immunohistochemical stain of the oseophageal polyp show: A) PAN CK [Negative] B) CMV [Negative] C) CD68 [Negative] D) Low KI67 index [3%]

DISCUSSION

In 1982, Isaacson was the first to investigate bizarre stromal cells in the gastrointestinal tract, in which ten cases were researched that closely resembled malignancy[5]. Three of those cases were treated as if they were malignant, leading to unnecessary resections. These errors made in the past shed light on the importance of meticulous diagnosis to avoid any needless treatments such as invasive surgery. Throughout the years, there was an increased number of endoscopic evaluations to determine various GI disorders, which led to the frequent identification of these pseudomalignant lesions[3]. These lesions were not restricted to the GI tract, as they were identified in other organs such the breast[6], urinary bladder[7] and female genital tract[4].

Most BSCs in the oesophagus are located at the gastroesophageal (GE) junction; and when BSCs are present as an ulcerated polyp, they are almost always less than 20 mm in size[8]. Patients with these lesions present with unspecific upper gastrointestinal symptoms such as upper abdominal pain, abdominal distension, belching, and regurgitation[9].

On histology, the lesion shows a proliferation of spindled to epithelioid cells, with a variable amount of amphophilic cytoplasm and large vesicular nuclei with prominent eosinophilic nucleoli. However, these highly atypical cells were observed to be embedded in granulated tissue with no mitotic figures. The cells from the biopsy are observed to be embedded in granulated tissue with no mitotic figures[10]. Immunohistochemistry shows that atypical cells positive for vimentin are indicative of fibroblastic origin. However, they were found to be negative for the CD34 marker. CMV, cytokeratin, HMB45 and S100 each help to rule out both malignancy and CMV infection. For these reasons, BSC are considered reactive lesions rather than neoplastic or infectious.

To further emphasize the benign origin of these lesions, it is highly recommended to repeat the endoscopic procedure 3-5 weeks after initial diagnosis as this is the time period in which atypical regenerative changes can significantly decrease[2].

CONCLUSION

We present a case of BSC in the distal oesophagus that was a mimicker of malignancy and CMV infection. It is crucial to correctly diagnose the benign properties of BSC through the use of histology and immunohistochemistry as its importance lies in the avoidance of unnecessary major interventions.

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