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Case Report

Russell body cervicitis presenting as endocervical polyp: a case report

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ABSTRACT

Russell body cervicitis has been rarely reported in the literature. Herein, we reported another case of this entity. A 42 years old female patient who presented with postcoital bleeding, a clinical diagnosis of cervical polyp was made which was subsequently biopsied. Histopathological diagnosis of Russell body cervicitis was given followed by positive immunoreactivity for CD138, Kappa and Lambda. Heightened awareness of the existence of this entity may result in reporting of similar cases, which may assist in concluding its pathogenesis and causative agent.

Keywords: Abnormal uterine bleeding, Cervicitis, Plasma cells, CD 138 antigen

INTRODUCTION

Cervicitis is the commonest non-neoplastic condition affecting the cervix. However, Russell body cervicitis is an extremely rare form of cervicitis.[1] In Russell body cervicitis, the plasma cells are filled with Russell bodies. Russell bodies are eosinophilic inclusions of plasma cells in the cytoplasm, and occasionally in extracellular matrix.[2] Russell bodies, first described in 1890 by Russell are referred to as immunoglobulin-containing inclusions, made by abnormal secretion of plasma cells, characterized by distended rough endoplasmic reticulum. The unusual pattern of inflammation has been reported at other sites also due to prolonged antigenic stimulation, as in gastric mucosa, Barret's esopahgus, chronic lymphocytic thyroiditis, rheumatoid arthritis, and ulcerative colitis. Few neoplasms like plasmacytoma and B-cell lymphomas have also been associated with this condition.[3]

Very few cases of involvement of cervix by Russell bodies have been reported till date. We reported this rare entity along with review of literature for a better understanding of its pathology and associations.

CASE REPORT

42-year-old female, presented with complaints of postcoital bleeding for one month. On per speculum examination, a small cervical polyp measuring 0.9×0.5×0.4 cm was seen protruding through the cervix. Clinical diagnosis of benign endocervical polyp was made. Polypectomy was done which was sent for histopathological examination.

Grossly, multiple grey white tissue pieces were received admixed with mucin. Microscopy (hematoxylin and eosin stain) revealed an endocervical polyp lined by endocervical lining (Figure 1). The stroma showed dense infiltration by plasma cells (Figure 2a). Numerous binucleated plasma cells and Russell bodies were noted (Figure 2b). Differential diagnosis of Russell body cervicitis and plasmacytoma were kept. Immunohistochemistry was done, the cells were positive for CD 138 (plasma cell marker) (Figure 3). Kappa and Lambda light chains (polyclonality marker) were done, both of which were positive. Final diagnosis of Russell body cervicitis was given. Patient is now asymptomatic without any evidence of recurrence for two months and is now on close follow-up.

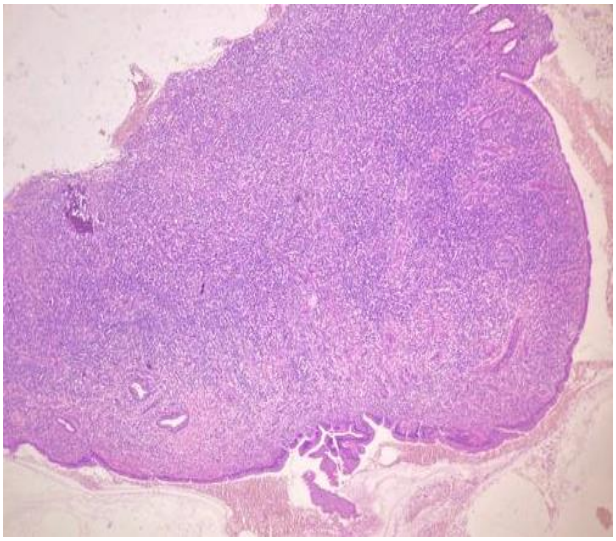

Figure 1: Polyp lined by endocervical lining (scanner).

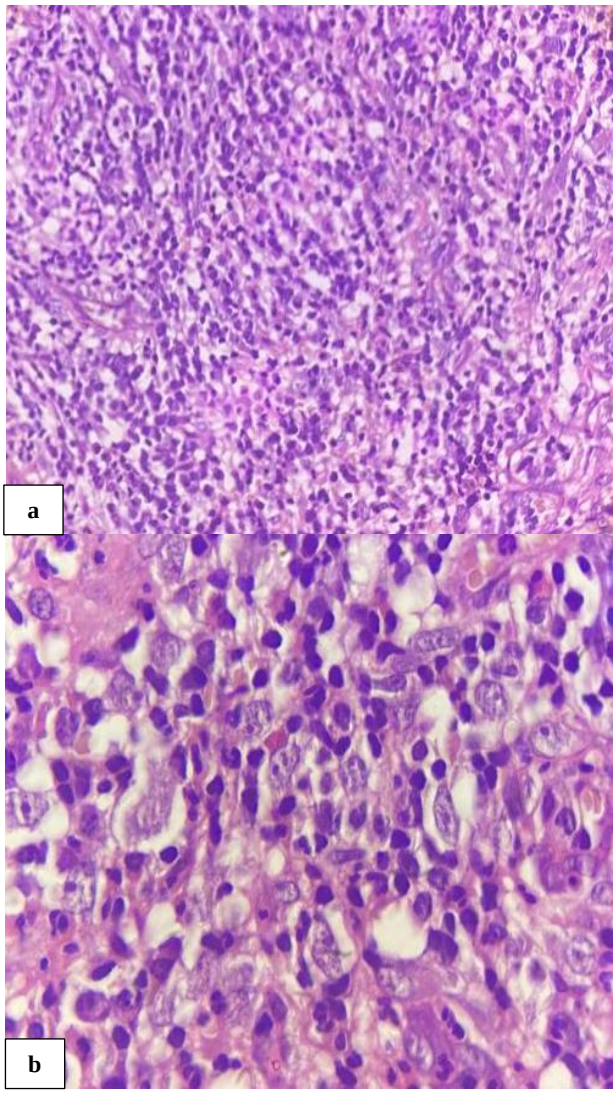

Figure 2: (a) Diffuse sheets of plasma cells (low power view); (b) plasma cell infiltration with Russell bodies (black arrows) (high power view).

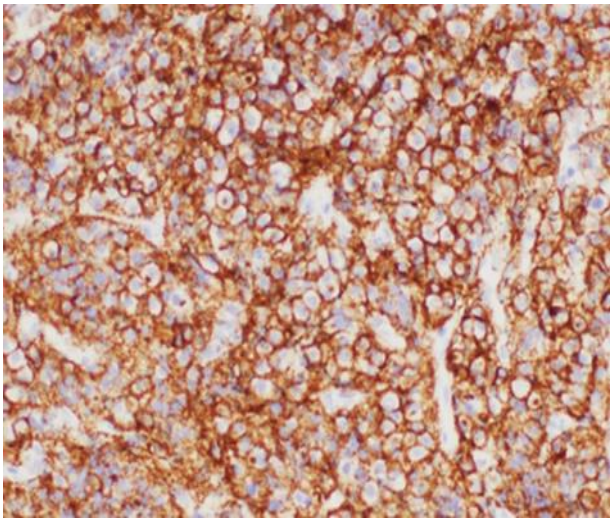

Figure 3: Plasma cells highlighted by CD 138 IHC (high power view).

DISCUSSION

Local mucosal immunity in cervix is provided by variable population of lymphocytes and plasma cells. Chronic cervicitis is a common condition caused by non infectious pathology of which Russell body cervicitis is one. Stewart et al were first to describe this rare entity in 2006.[4]

Russell bodies are large (2-3 µm diameter) homogenous hyaline immunoglobulin usually single inclusions seen in cytoplasm of the plasma cells. When a plasma cell contains multiple vacuoles or inclusions, they are called Mott cells.[5] Pathogenesis includes an increased immunoglobulin secretion within the rough endoplasmic reticulum due to immune stimulation.[6] Both reactive and neoplastic (plasmacytoma and B cell lymphoma) conditions have been associated with similar morphology.[7]

Russell body cervicitis is a rare inflammatory pathology in cervix, characterised by dense plasma cell rich infiltrate and variable number of mott cells. Aetiology, pathogenesis and natural course of this condition remains unclear largely due to its rare presentation. Possible stimulants for abnormal plasma cell proliferation and infiltration in cervix include bacteria, seminal fluid, ingredients of douche and contraceptive substances.[5]

Morphological changes in Russell body cervicitis apart from changes of chronic cervicitis are sheets of plasmacytic inflammatory infiltrate in the cervix accompanied by numerous Russell bodies.[4] This was a rare histologic finding with very few reported cases in literature. Extensive search was done for reported cases of Russell body cervicitis in literature till date and findings are tabulated in Table 1.

Similar association have been reported at other sites. It had been reported with *Helicobacter pylori* infection in gastric mucosa (Russell body gastritis), in inflamed dental pulp,

Barret esophagus, dermatitis, duodenal ulcer, gingivitis. In Russell body gastritis, chronic *H. pylori* infection leads to over stimulation of plasma cells by mucosal pathogens. After *H. pylori* eradication, morphological changes regressed in the gastric mucosa which indicated role of the infectious agent in its pathogenesis.[9] However, the involvement of a specific infectious agent in Russell body cervicitis is not yet documented.

Differential diagnosis included plasmacytoma and malakoplakia.[10] Johansen et al in their study on endoscopic gastric biopsies found a higher density of plasma cells with Russell body in the peritumoural mucosa in patients with adenocarcinoma stomach, and suggested possible role of these cells in development of malignancy. In such cases possibility of plasmacytoma must be ruled out by establishing polyclonality with immunostains using kappa and lambda light chain.[11] Malakoplakia is a rare chronic inflammatory disease. The diagnostic finding is presence of characteristic Michaelis-Gutmann bodies which were basophilic, PAS-positive structures with surrounding clear halo.[12]

Rarely diffuse infiltration of Russell body containing plasma cells can mimic signet ring carcinoma. In such cases negative immunohistochemistry with cytokeratin establishes the diagnosis.[13]

Table 1: Cases of Russell body cervicitis reported in the literature.

Year of publication	Author name	Clinical presentation	Follow up
2006	Stewart et al[4]	Low-grade squamous intraepithelial lesion (LSIL) on routine cervical smear, biopsy showed Russell body cervicitis with no evidence of cervical intraepithelial neoplasia 1 (CIN 1)	Asymptomatic for six months
2007	Salmo et al[8]	Cervical polyp with contact bleeding, history of miscarriage three weeks ago	Asymptomatic for one year
2014	Foda et al[3]	Cervical polyp with contact bleeding	Asymptomatic for six months
2018	Altun et al[2]	Colposcopy and biopsy following positive Human papillomavirus DNA screening test, suspicious looking cervix	Asymptomatic for one year
2020	Joseph et al[1]	Recurrent endocervical polyp (4 times)	Asymptomatic for 14 months
2021	Shabeer et al[5]	Postcoital bleed for two weeks	Asymptomatic for 2 months
2022	Present Case	Postcoital bleed for one month	Asymptomatic for months

CONCLUSION

Russell body cervicitis is an extremely rare entity and very few cases have been reported till date. Increased awareness of the existence of this type of inflammation may result in reporting more similar cases in the future. This will not only aid in studying the possible aetiologies and specific causative agents but also help in establishing specific treatment protocols.

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