



CASE REPORT

## Russell Body Cervicitis-rare But Relevant

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### Abstract

Russell body cervicitis is a rare form of cervicitis characterised by the accumulation of intracytoplasmic eosinophilic inclusion bodies in the plasma cells. Extensive literature search revealed previous four reported cases of Russell body cervicitis. Here, we report a case of Russell body cervicitis in a 44-year-old female who presented with recurrent endocervical polyps.

**Keywords** Russell bodies · Chronic cervicitis · Plasma cells

### Introduction

Cervicitis is the most common condition affecting the cervix. Russell body cervicitis is a very rare form of cervicitis. Only a few publications are available in the literature. Russell body cervicitis is characterised by the accumulation of Russell bodies in the plasma cells. Under inflammatory conditions, immunoglobulins accumulate in the endoplasmic reticulum of the plasma cells with ribosomes forming eosinophilic cytoplasmic inclusions called Russell bodies (Fig. 1).

### Case Summary

A 44-year-old house wife presented with menorrhagia in 2007. She was Para 2, with history of two full-term normal deliveries and postpartum sterilisation. She was hypertensive and was on antihypertensives. On evaluation, she was found to be anaemic. She underwent endometrial biopsy and polypectomy. Histopathology report was suggestive of Endocervical polyp and proliferative endometrium (Fig. 2).

Subsequently, she underwent Polypectomy two times for endocervical polyp in 2010 and 2014, both detected during follow-up pelvic examinations. Histopathology report was benign endocervical polyp both the times.

She was again detected to have endocervical polyp in March 2019. Endometrial biopsy and polypectomy was done. Histopathology report came as Simple hyperplasia Endometrium, Endocervical Polyp reflecting Russell body cervicitis. Immunohistochemistry showed intense positivity of plasma cells with CD138 marker (Fig. 3).

The patient was very anxious due to the occurrence of recurrent endocervical polyp and the repeated biopsy procedures she had to undergo. She wanted to undergo total hysterectomy if there is any further recurrence. We have reassured her and kept her under follow-up. She is asymptomatic after a follow-up of 14 months.

Her cervical smear and vaginal swab culture was normal.

### Discussion

Cervicitis is the most common condition affecting the cervix. It is frequently asymptomatic or may present with abnormal vaginal discharge, intermenstrual bleeding or post coital bleeding (Table 1).

### Causes

1. Inflammation
2. Infections-Gonorrhoea, Chlamydia, Trichomoniasis, Mycoplasma, Genital herpes
3. Bacterial vaginosis

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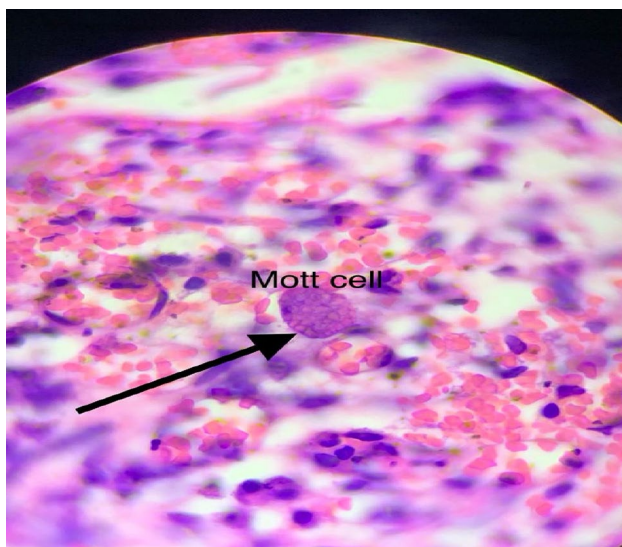
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**Fig. 1** Rich plasma cell collection with Russell bodies

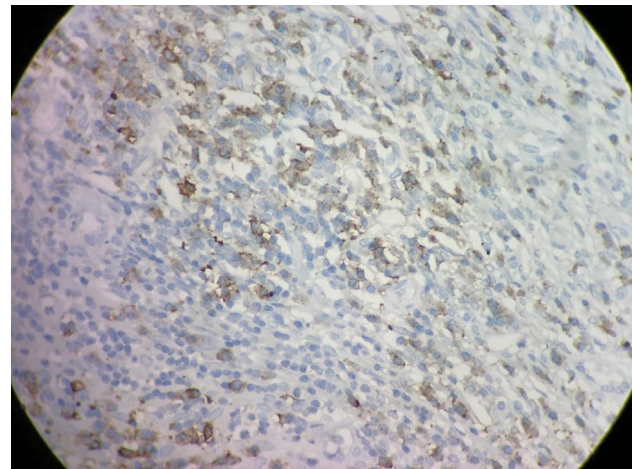


**Fig. 2** Mott cell

#### 4. Irritation due to chemicals or frequent douching.

Usual histology is inflammation of the cervical mucosa with increased lymphocytes forming lymphoid follicles with germinal centre. Other frequent findings include Neutrophils, plasma cells, Tingle body macrophages with intracytoplasmic debris, etc. Immunohistochemistry is polyclonal with admixture of B and T lymphocytes markers and no kappa and lambda light chain restriction [1].

Russell body cervicitis is a very rare form of cervicitis. Only a few publications are available in the literature. Extensive literature search revealed previous four reported cases of Russell body cervicitis. The aim of this case report is to enlighten the existence of such an entity which can at times cause confusion in diagnosis and management.



**Fig. 3** Immunohistochemistry: Intense positivity of Plasma cells with CD138 marker

Russell bodies were first described by Russell in 1890 [2]. Russell bodies are eosinophilic inclusions in the cytoplasm of the plasma cells. Such plasma cells are called Mott cells [3]. Under inflammatory conditions, immunoglobulins accumulate in the endoplasmic reticulum of the plasma cells with ribosomes. They can be sometimes extracellular also. In Russell body cervicitis, plasma cells are filled with Russell bodies. In 1963, Munsick and Janoveski [2] first reported Russell body cells in cervicitis.

Russell bodies have been reported in chronic inflammatory conditions like Chronic lymphocytic thyroiditis, Rheumatoid arthritis, Ulcerative colitis, and in neoplastic conditions like Plasmacytoma and B cell Lymphoma. Russell body gastritis has been described in association with *Helicobacter pylori* infection. Russell body formation rarely accompanies ophthalmitis, oesophagitis, gingivitis, dermatitis and duodenal ulcers also.

Bacteria, seminalfluid, ingredients of douche and contraceptive substances have been attributed to be the stimulus causing plasma cell infiltration. But the exact cause and life span of Russell bodies has also not been ascertained clearly.

In Immunohistochemistry, they are CD138 positive (plasma cell marker) and histochemically Periodic acid-Schiff (PAS) positive [4]. Differential diagnosis of Russell body cervicitis is Plasmacytoma(differentiated by demonstration of light chain restriction by Immunohistochemistry) and Malakoplakia (differentiated by the presence of characteristic Michaelis–Gutmann bodies which are basophilic structures with surrounding clear halos and are Periodic acid-Schiff positive. It can sometimes be confused with signet ring cells of carcinoma also.

Plasma cell cervicitis is also a rare form of cervicitis closely associated with oncogenic Human papilloma virus 18 infection at times. Histologically, dense collections of plasma cells associated with other mixed inflammatory cell collections are

**Table 1** Cases of Russell body cervicitis reported in the literature

Authors	year	Age of the patient	Presentation and associated findings
Stewart and Leake [1]	2006	35	Thirty-five-year-old asymptomatic woman underwent routine Papsmear testing which showed low-grade squamous intraepithelial lesion consistent with cervical intraepithelial neoplasia (CIN) Colposcopy was consistent with Human papilloma virus (HPV) effect Punch biopsy ruled out CIN and HPV infection Cervical stroma showed diffuse infiltrate of plasma cells with abundant cytoplasm distended by numerous Russell bodies Immunohistochemistry demonstrated expression of CD79a and CD138 by plasma cells
Salmo and Farroha [4]	2007	29	Twenty-nine-year-old female with history of miscarriage 3 weeks back presented with post-coital bleeding Clinical examination revealed small cervical polyp which was excised and sent for histopathology Microscopy was suggestive of severely inflamed, benign endocervical polyp with one fragment showing intense stromal infiltration of plasmacytoid cells with eccentric nuclei and prominent eosinophilic intracytoplasmic Russell bodies In histochemistry, globules were PAS positive. In Immunohistochemistry, cells were positive with plasma cell marker CD138 and B cell marker CD79a confirming them to be plasma cells. Kappa and Lambda immunostains showed polyclonal pattern confirming the non-neoplastic nature of the plasma cells
Foda et al. [3]	2014	35	Thirty-five-year-old patient presented with contact bleeding Clinical examination revealed 1 cm × 0.5 cm × 0.5 cm polyp in the cervix, which was biopsied Histopathological examination of the polyp showed papillary configuration of the surface epithelium with underlying stroma intensely infiltrated by plasma cells with eccentric nuclei and prominent eosinophilic intracytoplasmic Russell bodies Histochemically, the globules were PAS positive. Immunohistochemical cells demonstrated positivity for plasma cell marker CD138
Altun et al. [2]	2017	40	Forty-year-old woman was found to be HPV DNA screening positive and HPV-66 positive She underwent Colposcopy and biopsy for a suspicious looking cervix Microscopy showed that the endocervical polyp contained numerous plasma cells with intracytoplasmic Russell bodies

found. Differential diagnosis includes Plasma cell granuloma and Solitary plasmacytoma.

The exact aetiology and significance of Russell body cervicitis is not clear yet and leaves the scope for further research.

## Compliance with Ethical Standards

**Conflict of interest** The authors declare that they have no conflict of interest.

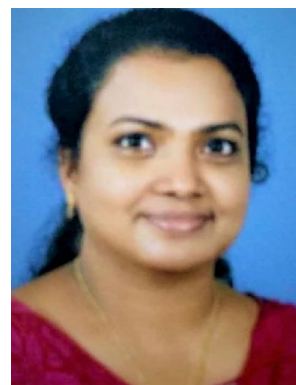
**Informed Consent** Informed written consent has been obtained from the patient for the publication of this case.

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