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Case Report:

Severe Eosinophilic Endometritis Following Diagnostic Curettage

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Abstract:
Severe Eosinophilic Endometritis appears after injury from a preoperative diagnostic procedure. It is an unusual and distinctive inflammatory uterine disease process, in response to eosinophil chemotactic substances. We report this case of a 55-year-old lady who developed severe eosinophilic endometritis following a diagnostic curettage.
Key Words: Eosinophilic endometritis, curettage

Introduction:

Eosinophilic endometritis is a condition in which there is abundant eosinophilic infiltration of the endometrium. The probable causative agents are the eosinophil chemotactic substances liberated from the myometrial mast cells and from the degrading blood clot filling the uterine cavity.

We present this case in view of its rarity, as the search across medline revealed only a single article by Miko TL, et al.[1]

Case Report:
A 55-year-old post-menopausal female came with complaints of bleeding per vaginum & pain in abdomen of two months duration. She had three children and her obstetric history was unremarkable. She reached her menopause at the age of 46 years. The differential leukocyte count in peripheral blood showed presence of 70% polymorphs, 26% lymphocytes and 4% eosinophils. No abnormality was detected on the routine urine examination. Her hematological profile and biochemical profile including blood sugar level, blood urea and serum creatinine were within normal range. Ultrasound examination of pelvis revealed a bulky uterus, showing mildly thickened endometrial layer (measuring 7mm in thickness). A diagnostic curettage was performed but no opinion was possible due to inadequacy of the sample. Therefore, another diagnostic curettage was performed after eight days.

The sections from the specimen revealed endometrial tissue with tiny tubular glands lined by columnar epithelium along with stromal bits infiltrated by eosinophils, plasma cells and polymorphs (Figure 1). More than 40 eosinophils per high power field were noted in all the fields, in all the slides. A separate bit showed only inflammatory cell exudate rich in eosinophils, plasma cells, polymorphs and few lymphocytes (Figure 2). No other cause of tissue eosinophilia, such as allergic, infective or any other etiology could be found. Plasma cells are not present in normal menstrual endometrium.[2] Therefore, in view of infiltration of the endometrial glands and stroma by plasma cells and eosinophils, diagnosis of eosinophilic endometritis was made.

The bleeding stopped following the curettage. The post-procedure course was uneventful. The patient had no complaints or recurrence of bleeding per vaginum at the 8 month follow-up visit.

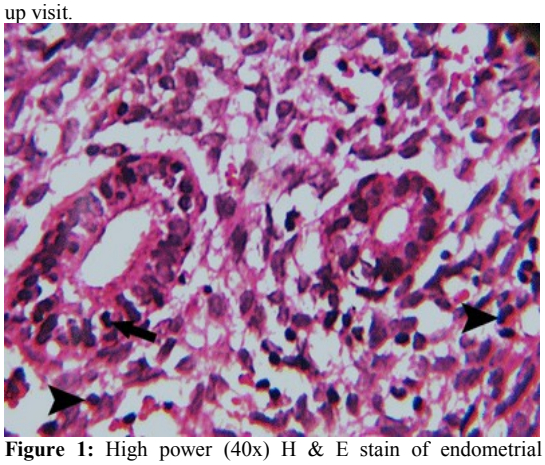

Figure 1: High power (40x) H & E stain of endometrial sample shows eosinophilic infiltration of endometrial glands (Arrow) and stroma (Arrowheads)

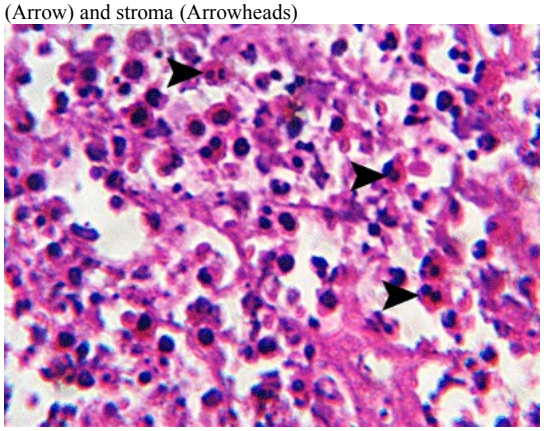

Figure 2: High power (40x) H & E stain showing dense eosinophilic infiltration (Arrowheads)

Discussion:

Eosinophilic endometritis is an unusual & distinctive inflammatory uterine pathology. It appears any time between 18 hours to 21 days after a previous diagnostic procedure such as curettage. Our case had undergone a diagnostic curettage eight days before the second diagnostic curettage. The second diagnostic curettage was performed due to inadequate sample on the first curettage.

Lymphocytes, polymorphs and macrophages are the normal constituents of the endometrium. However, plasma cells are never found in the normal endometrium.[2] Hence, a diagnosis of endometritis depends on the presence of plasma cells. In view of the extensive infiltration of the endometrial glands and stroma by both eosinophils and plasma cells, the diagnosis of eosinophilic endometritis was made instead of simple eosinophilic infiltration of endometrium. Eosinophils and plasma cells may also be seen in chronic endometritis, although in small numbers. In a large study, Adegboyega et al [3] found an average of 2.74 eosinophils per HPF in patients with chronic endometritis. Presence of eosinophils in endometrial biopsy should prompt a search for plasma cells, with immunostaining if required.[3] In our patient, plasma cell infiltrate was present in addition to more than 40 eosinophils per high power field all the fields, in all the slides.

To the best of our knowledge, no definite quantitative criteria for the diagnosis and severity of eosinophilic endometritis exist. Diagnostic criteria have been proposed for eosinophilic esophagitis. Many authors suggest one high-power field with >20 eosinophils or multiple high-power fields with >15 eosinophils as the cut-off for the diagnosis of eosinophilic esophagitis.[4] Even though it is not clear whether eosinophilic endometritis and eosinophilic esophagitis share a common etiopathology, we tried to apply the diagnostic criteria of eosinophilic esophagitis to our case, for lack of other available diagnostic criteria. Our case fulfils these diagnostic criteria. We labeled presence of >40 eosinophils per high power field in all the fields in every slide, as severe eosinophilic endometritis. Other causes of blood eosionphilia and tissue eosinophilia, including infective or allergic etiologies, need to be ruled out before making the diagnosis of eosinophilic endometritis. In our case, the patient's history, and hematological, biochemical or urine examination did not reveal any other cause of tissue or blood eosinophilia.

A retrospective analysis of 1065 endometrial curettage samples and 1248 hysterectomy specimens seen in our institute over the past two years was performed. Apart from the case discussed here, no other case fulfilled the diagnostic criteria for eosinophilic endometritis as described above.

In eosinophilic endometritis, the degree of inflammation appears to correlate with the extent of previous injury.[1] However, the histological changes show no correlation with the clinical signs or symptoms. It is proposed that the probable causative agents are eosinophil chemotactic substances liberated from the myometrial mast cells & from the degrading blood clot filling the uterine cavity.[1]

Our search across medline revealed only one article by Miko TL etal documenting eosinophilic endometritis associated with diagnostic curettage in humans.[1] A case of contact dermatitis to copper-containing intrauterine contraceptive device has been reported in which endometrial eosinophilic infiltration was present.[5] This could point towards an allergic origin, just like eosinophilic esophagitis.[6] Significant eosinophilic infiltrate was also noted in 6.4% cases of infertility in a study in Nigerian women.[7] However, the available literature on eosinophilic endometritis is sparse.

To conclude, severe Eosinophilic Endometritis is a peculiar entity usually found following diagnostic uterine curettage. More research into its etiology and pathogenesis is necessary, considering the scarcity of available literature.

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