Endometrial osseous metaplasia and mature bone formation with extramedullary hematopoiesis

Sir,

Endometrial osseous metaplasia is an uncommon disease with the presence of mature bone in the endometrium. The etiopathogenesis of this entity is still unclear.[1] The phenomenon of associated extramedullary hematopoiesis (EMH) is rare with only few cases reported in the world literature so far.[2] We report another such case of histologically proven endometrial osseous metaplasia and mature bone formation with EMH.

A 28-year-old woman reported to this institute with complaints of menorrhagia and secondary subfertility. She gave past history of 3 full-term normal deliveries, last child birth being 5 years earlier, and also reported miscarriage with subsequent dilatation and curettage (D and C) at 12 weeks of gestation 1 year previously. Her general examination was unremarkable. Her hematologic parameters were normal and no abnormality was detected after routine hematologic workup. Pelvic ultrasound examination showed evidence of endometrial ossification. She underwent fractional curettage as a part of diagnostic workup for her complaints. Grossly the curettings measured 2.5 × 1.5 cm with bony texture. Microscopic examination showed mature bony trabeculae enclosing hematopoietic marrow, including megakaryocytes. The surrounding endometrial tissue revealed features of late secretory endometrium with mild-stromal infiltration by lymphocytes and plasma cells [Figures 1 and 2]. However, no granulomatous pathology suggestive of tuberculosis was observed. A diagnosis of endometrial osseous metaplasia and mature bone formation with EMH was given.

Endometrial osseous metaplasia with mature bone formation is an uncommon clinical entity. Nearly 80 cases have been reported in the world literature, including 9 cases from India.[1] The phenomenon of associated EMH has been reported as a rare occurrence. EMH is defined as abnormal development and growth of hematopoietic tissue in sites other than those that are normally active.[2]

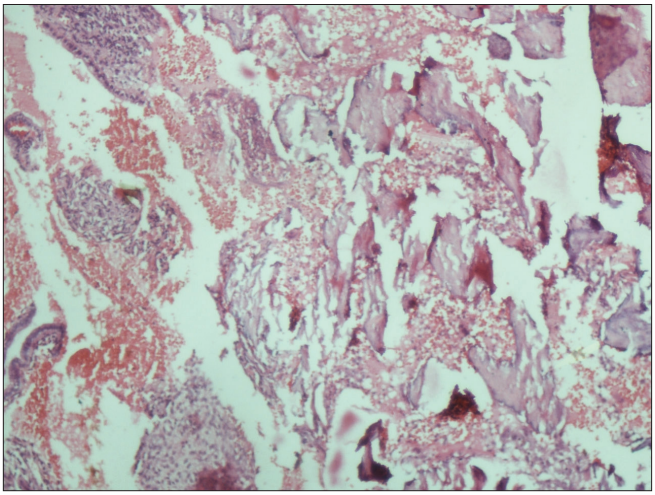

Figure 1: Photomicrograph showing mature bony trabeculae with hematopoietic cells, including megakaryocytes surrounded by the endometrial tissue (H and E, ×100)

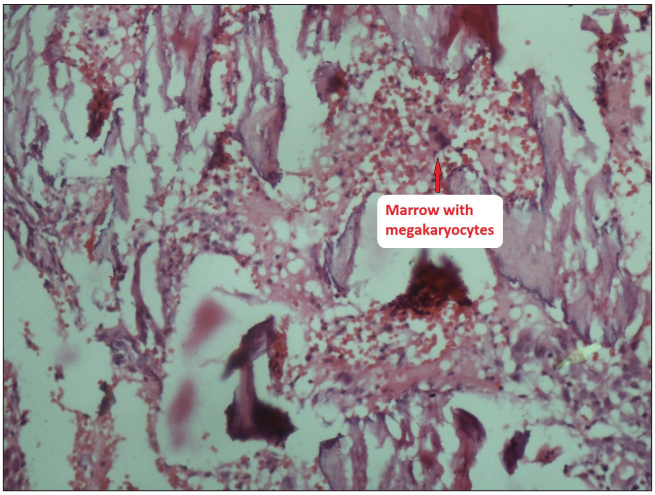

Figure 2: Higher magnification showing hematopoietic precursors and megakaryocytes (H and E, ×200)

Recent studies have shown its association with chronic myeloproliferative disorders, and other hematologic malignancies in up to two-thirds of the cases.[2,3] A study of 20 cases of EMH in uterus was carried out by Gru *et al*.[2] In their series, a majority of the cases were associated with chronic anemias, and no preexisting hematologic malignancy was detected. The first report of mature bone in the endometrium with marrow formation was described by Ganem *et al*.[4] The commonly proposed theories for endometrial osseous metaplasia are as follows: heterotropia, dystrophic calcification, postabortive endometritis, metastatic calcification, prolonged estrogenic therapy after abortion, and retained fetal bone.[1,5] Most of the authors strongly contend that bone is formed as a result of metaplasia of endometrial stromal cells into osteoblastic cells.[1] The time interval

between antecedent abortion and the detection of endometrial ossification varies from 8 weeks to 15 years in the reproductive age group.[1] In our case, the postabortion time interval was 1 year. The presence of mature bone with active hematopoietic marrow may be attributable to bone being within endometrial cavity for a sufficient time, to allow circulating hematopoietic stem cells to colonize the tissue and initiate marrow formation. The presence of mature bone in the endometrium is an undisputable etiologic factor causing menorrhagia and secondary subfertility, but the associated marrow formation in the bone does not need an extensive hematologic workup because it is seldom associated with a serious hematologic disorder.

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