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Chondroid Metaplasia of Peritoneum - A Case Report

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Abstract: ***Chondroid metaplasia is a rare but well - recognized phenomenon. Very few cases of chondroid metaplasia in the peritoneum have been described in literature. Most of the cases have past history of surgical intervention. We report case of a 38 year old female with past history of open appendicectomy and three first trimester abortions who presented with menorrhagia and suspected adenomyosis. Patient underwent abdominal hysterectomy during which a small nodule measuring 1.5x1 cm was noted in the omentum which was excised. Microscopically, lobulated nodules of mature hyaline cartilage surrounded by mature adipose tissue was noted beneath overlying benign mesothelium. Exact histogenesis of this phenomenon is poorly understood. Commonly supported theory includes a possible differentiation of submesothelial multipotent stem cell into a cartilaginous tissue in response to prior abdominal trauma or surgery.***

Keywords: Cartilaginous metaplasia; Peritoneal chondroid metaplasia; heterotopic cartilage

1. Introduction

Cartilaginous differentiation/Chondroid metaplasia in the peritoneum is very rare. Few cases of chondroid metaplasia in unusual and unexpected sites including tongue, brain, tonsils, prostate and peritoneum have been described in the past. Most of the cases of chondroid metaplasia in human peritoneum are associated with past history of abdominal surgery. The exact histogenetic mechanism of such occurrences have not yet been established fully.

2. Case Report

Patient was a 38 year old Asian female who presented with heavy menstrual bleeding for the past 6 - 7 years. USG showed bulky uterus (16x11 cms) with heteroechoic area measuring 13x10 cm and possibilities including large fibroid and Adenomyosis were considered. Left ovary showed simple ovarian cyst. She gave history of open appendicectomy 15 years before presentation. Also history of past three first trimester abortions managed with dilatation and curettage were present. Patient underwent total abdominal hysterectomy with bilateral salpingectomy and left oophorectomy. Intraoperatively, significant bowel adhesions involving large bowel were present. A small nodule measuring 1.5x1 cm was noted in the omentum which was excised.

Macroscopically, the nodules measured 1.5x1x0.5 cm with grey - white cut surface. Uterus was globularly enlarged with myometrium showing trabeculations and cyst - like spaces. Left ovary measuring 5x4.5x1.5 cm showed cortical cysts. Cervix and bilateral fallopian tubes showed no specific pathology.

Microscopically, lobulated nodules of mature hyaline cartilage surrounded by mature adipose tissue and overlying benign mesothelial lining was noted (Figure 1, 2, 3, 4). Uterus showed adenomyosis with chronic papillary endocervicitis. Left ovary showed cystic follicles. Bilateral fallopian tubes were unremarkable.

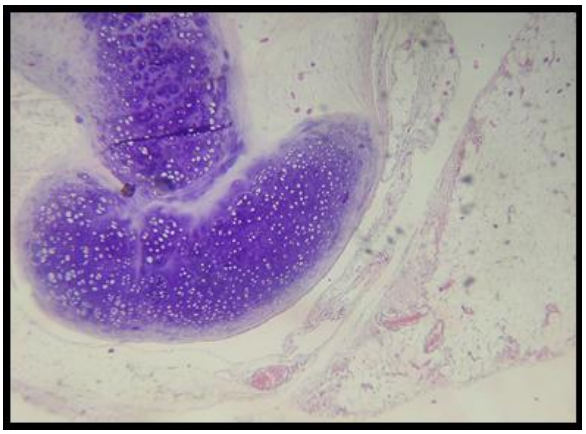

Figure 1

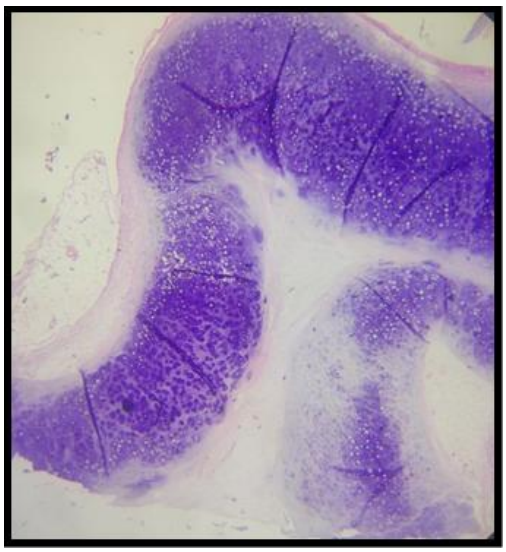

Figure 2

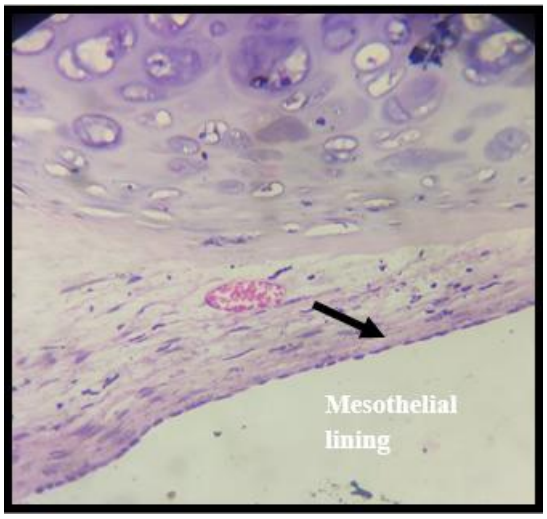

Figure 3

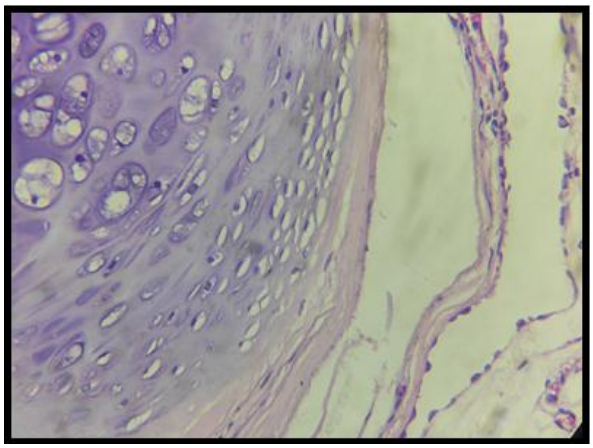

Figure 4

3. Discussion

Chondroid metaplasia of the peritoneum is described as the presence of nodules of mature cartilage without atypia and in the absence of malignant mesothelial neoplasm, metastatic adenocarcinoma, or fetal implantation. To the author's best knowledge, nine cases of chondroid metaplasia of the peritoneum have been reported in the past. Five out of nine cases had prior abdominal surgery. In two cases, history was not available. Eight out of nine cases have been reported in females. Only one case has been reported in a male and it was not associated with prior surgery (2).

The possible histogenesis of cartilaginous differentiation/chondroid metaplasia in the peritoneum includes a possible differentiation of submesothelial multipotent stem cell into a cartilaginous tissue in reaction to prior abdominal trauma or surgery (1). This was supported by the fact that most cases of chondroid metaplasia have prior history of surgery. Moreover, cases of osseous, squamous, and Mullerian metaplasia of peritoneum have been reported, which indicated that mesothelial cells have the potential to differentiate into heterologous elements, further giving credence to this hypothesis (2).

Chondroid nodules in the peritoneum may represent either teratomatous tissue, fetal rests from a conception product, or metaplasia of pluripotent mesenchymal cells. The unique genetic characteristics of ovarian teratomas (homozygous at many polymorphic microsatellite loci) versus normal tissues (heterozygous at the same loci) were used to investigate the origin of chondroid nodules in the peritoneum. The results indicated that peritoneal chondroid nodules arise within the peritoneum, presumably from pluripotent mesodermal stem cells, and are not related to teratomatous proliferation, or previous pregnancy. This finding shows once again the plasticity and metaplastic potential of stem cells within the peritoneal cavity (3).

4. Conclusion

Chondroid metaplasia is a rare but well - recognized phenomenon (5). In most of the cases, it is an incidental finding during a surgical procedure. Almost all of the reported cases were associated with a history of surgical intervention, leading to a proposed explanation of submesothelial multipotent cells differentiating along mesenchymal lines in reaction to trauma or surgery (4).

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