Case Study

Ovarian Deciduosis Mimicking Malignancy: A Case Report & Digital Pathology Framework for Recognizing Benign Pregnancy-Associated Lesions

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Abstract

Ectopic decidualization, or deciduosis, is a benign, hormone-dependent proliferation of decidual-type stromal cells outside the uterine endometrium. During pregnancy, it is most often an incidental finding. Yet, its nodular gross appearance and cellular histology can closely imitate disseminated malignancy, exposing patients to overtreatment when it is misread intra-operatively or on biopsy. A 34-year-old second-gravida woman was admitted in active labour and had an uncomplicated full-term vaginal delivery. On the second postpartum day, during elective tubal ligation, a 5 × 4.5 × 3 cm right ovarian cyst studded with off-white, shiny surface nodules were identified and excised together with bilateral tubal ligation. Histology demonstrated a serous cystadenoma lined by a single layer of flattened-to-cuboidal epithelium, accompanied by surface and parenchymal nodules of bland, large polygonal cells with abundant eosinophilic cytoplasm consistent with decidua. Immunohistochemistry (PR positive, CD10 positive, focal inhibin positivity, CK20 negative) together with the absence of nuclear atypia or mitoses supported a benign decidual reaction. A systematic search excluded occult malignancy; after multidisciplinary consensus, no further treatment was given, and the patient remained asymptomatic. We situate this case within a medico-informatics framework, proposing that whole-slide imaging with computer-aided image analysis can reduce the diagnostic-error risk posed by benign mimics while generating reusable, machine-readable evidence for rare entities. Clinician and pathologist awareness of the condition, stringent histological criteria, and digital diagnostic infrastructure together protect pregnant patients from unnecessary intervention.

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1. Introduction

Deciduosis denotes the presence of decidual tissue in an ectopic, extra-endometrial location. The earliest descriptions are attributed to Bayer (1885), who observed decidual cells at the cervix during pregnancy, and to Walker (1887), who documented decidual cells in the pelvic peritoneum in a case of ectopic pregnancy; in 1905, Hirschberg reported a tubal pregnancy with appendiceal deciduosis that mimicked a granuloma or neoplasm **(Mangla *et al.* 2021)**. Together, these reports established ectopic decidualization as a recognizable, if uncommon, biological phenomenon that has continued to surprise clinicians and pathologists for more than a century. Deciduosis is a benign, self-limiting condition. It is hormone-dependent and is classically associated with the high circulating progesterone of pregnancy, although it may also arise on a background of endometriosis or with exogenous or endogenous progestational stimulation **(Kinra *et al.* 2006)**. When identified in a non-pregnant woman, an active search for an endogenous or exogenous source of progesterone is warranted. The lesion most often produces no symptoms, but depending on its location, it can present with abdominal pain, haemorrhage, or bowel-related complaints; rare but clinically dramatic presentations include potentially fatal haemoperitoneum and obstruction-like syndromes **(McCluggage 2006)**. Two principal theories address its origin. The first holds that ectopic decidua arises from pre-existing endometriosis that decidualizes in response to the hormonal milieu of pregnancy. The second invokes the shared embryological derivation of the peritoneum and the Müllerian ducts from coelomic epithelium and subjacent mesenchyme; under progesterone stimulation, pluripotent subcoelomic mesenchymal cells undergo metaplasia into decidual cells. By convention, endometrial-origin lesions are termed endometriosis-associated decidua, whereas lesions arising through mesenchymal metaplasia are termed deciduosis **(Kaneko *et al.* 2021)**. Although most reports describe pelvic peritoneal disease in pregnant women, ectopic decidua has been documented in the small bowel, appendix, mesentery, colon, renal pelvis, spleen, and even pelvic lymph nodes, where it can convincingly imitate the peritoneal spread of ovarian carcinoma or peritoneal mesothelioma. Ovarian involvement is comparatively uncommon. Across these sites, the recurring clinical danger is the same: a benign, regressing process can be mistaken, both grossly and microscopically, for disseminated malignancy **(Sorokin *et al.* 2020)**. This diagnostic hazard has direct consequences. Intra-operative frozen-section assessment of decidualized nodules is notoriously difficult, and an erroneous impression of carcinomatosis may trigger radical surgery, adjuvant therapy, and avoidable psychological harm in an otherwise healthy peripartum patient. Because deciduosis regresses spontaneously within four to six weeks postpartum, correct recognition spares the patient from any intervention **(Kennedy *et al.* 2019)**. In parallel, pathology is undergoing a digital transformation. Whole-slide imaging, computational image analysis, structured synoptic reporting, and standardized clinical terminologies are reshaping how morphological diagnoses are rendered, communicated, and reused. Rare benign mimics such as deciduosis are exactly the situations in which such tools can add value by capturing diagnostic features in machine-readable form, by supporting decision-making at the point of frozen section, and by aggregating scarce cases into shareable evidence **(Masjoodi *et al.* 2025)**. We report an unusual case of ovarian deciduosis discovered incidentally during postpartum tubal ligation, use it to articulate a medico-informatics framework for the recognition of benign and malignant mimics.

2. Materials and Methods

2.1. Clinical and Surgical Material

The patient was managed in a tertiary referral centre and gave written informed consent for publication of this report and the accompanying images. CARE reporting guidelines were followed while preparing this case report.

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2.2. Clinical Course

The patient was a 34-year-old woman, second gravida, admitted in active labour. She underwent an uneventful full-term normal vaginal delivery with episiotomy. On the second postpartum day, she underwent elective tubal ligation, during which a right ovarian cyst was identified incidentally; bilateral tubal ligation was therefore combined with right ovarian cystectomy, and the tissue was submitted for histopathology.

2.3. Methodology

The specimen was fixed in 10% neutral-buffered formalin, and the surgical pathologist recorded gross parameters, including dimensions, external surface characteristics, cut-surface appearance, cyst contents, wall thickness, and tubal measurements. Representative sections were taken from the cyst wall, the surface nodules, and the background ovary, processed routinely, embedded in paraffin, sectioned at standard thickness, and stained with haematoxylin and eosin. Light-microscopic assessment focused on the lining epithelium (stratification, papillary architecture, atypia, and mitotic activity) and on the nature, distribution, and cytology of the nodular deposits, with particular attention to features that distinguish a benign decidual reaction from a neoplastic proliferation **(Selak *et al.* 2025)**.

2.4. Ancillary Studies and Diagnostic Workflow

Immunohistochemistry was performed on formalin-fixed, paraffin-embedded sections to characterize the polygonal-cell nodules and to exclude an epithelial malignancy. Markers done were PR, CD10, cytokeratin 7 (CK7), cytokeratin 20 (CK20), and inhibin; appropriate positive and negative controls were run in parallel. Following histological diagnosis, a structured search (including whole-body PET-CT, Gastric endoscopy, & lower GI scopy) for occult malignancy was planned to confirm the nature of the lesion, and the case was discussed with a multidisciplinary team inclusive of surgical and medical gastro and obstetric and gynecology departments along with a medical oncologist, before a management decision of no further management needed was reached **(Bellizzi 2020)**. For this report and consistent with a medico-informatics orientation, the diagnostic glass slides were digitized at 40x magnification with calibrated scale bars, and the clinicopathological data were abstracted into a structured, tabular format **(summarized in Table S1)** to render the case machine-readable and reusable. The immunohistochemical and morphological discriminators relevant to the differential diagnosis were likewise organized into a structured matrix **(Table S2)** suitable for incorporation into synoptic reporting templates and decision-support logic. No experimental intervention was performed; this is a retrospective descriptive report of routine diagnostic practice **(Eloy *et al.* 2024)**.

Figure 1. Gross photograph of the right ovarian cyst. The greyish-white external surface is studded with multiple off-white, shiny, smooth-surfaced elevated nodules (brown arrow) corresponding to surface decidual deposits.

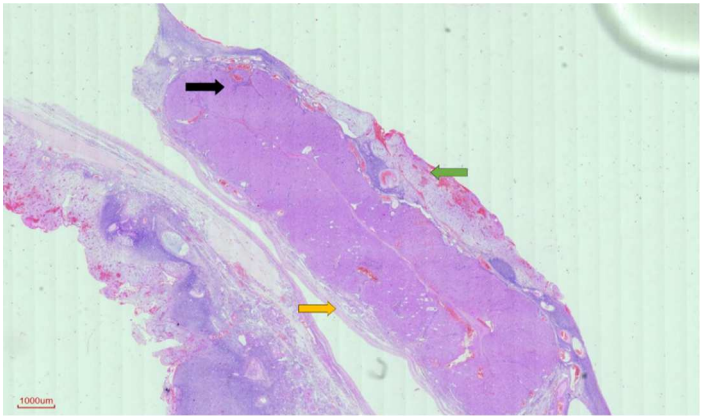

Figure 2. Low-power photomicrograph (haematoxylin and eosin) of the right ovarian cyst wall and adjacent ovarian tissue, demonstrating the overall architecture of the lesion (scale bar = 1000 µm). The image shows ovarian tissue comprising a corpus luteum (Black arrow), ovarian cyst wall (yellow arrow), and nodules and sheets of large polygonal cells with abundant eosinophilic cytoplasm and a central bland nucleus (Green arrow)

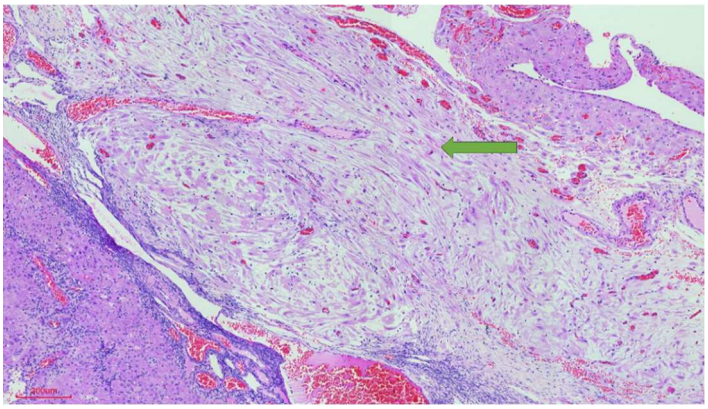

Figure 3. Photomicrograph (haematoxylin and eosin, ×10) showing nodular deposits of large polygonal cells with abundant eosinophilic cytoplasm and bland central nuclei (Green arrow), consistent with ectopic decidua, set against congested ovarian stroma (scale bar = 200 µm).

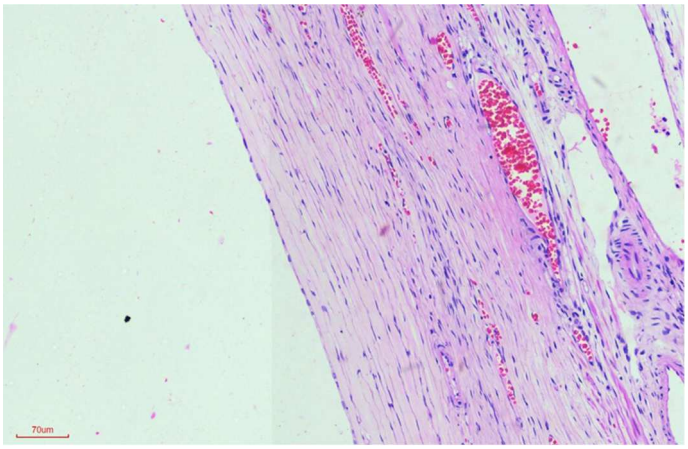

Figure 4. Higher-magnification photomicrograph (haematoxylin and eosin) of the cyst lining and adjacent wall, showing a single attenuated layer of flattened-to-cuboidal epithelium without atypia or stratification (scale bar = 70 µm).

3. Results

3.1. Gross Findings

The right ovarian cyst measured 5 × 4.5 × 3 cm. Its external surface was greyish-white and bore multiple off-white & congested shiny, smooth-surfaced, elevated nodules **(Figure 1)**. On sectioning, clear serous fluid drained from the cyst, the inner mucosal surface was smooth, and the cyst

wall measured 0.4 cm in thickness. The right fallopian tube measured 4.5 cm in length and 0.5 cm in diameter.

3.2. Microscopic Findings

The cyst was lined by a single layer of flattened-to-cuboidal epithelium without stratification, multilayering, or papillary formation, and without borderline change, nuclear atypia, or features of malignancy, appearances consistent with a serous cystadenoma **(Figures 2 and 4)**. The surrounding wall showed normal ovarian stroma containing a corpus luteum and follicular cysts. Within and on the surface of the ovary were numerous nodular deposits of large polygonal cells with abundant pale-to-eosinophilic cytoplasm and central, bland nuclei; the deposits were congested and morphologically resembled decidual tissue **(Figure 3)**.

3.3. Immunohistochemistry and Final Diagnosis

The large polygonal cells were positive for PR (progesterone receptor), CD10 and CK7, showed focal cytoplasmic positivity for inhibin, and were negative for CK20. For PR, the cells showed diffuse, strong nuclear positivity, while for CD10, cells showed consistent and diffuse cytoplasmic positivity. CK7 showed focal cytoplasmic positivity in the large cells. PR positivity supports progesterone-driven decidual differentiation, while CD10 positivity favors endometrial stromal/decidual stromal lineage. CK20 negativity is useful in excluding metastatic gastrointestinal adenocarcinoma, particularly signet-ring cell carcinoma/Krukenberg tumour. Although CK7 positivity was observed, this was interpreted cautiously in view of the bland cytomorphology and absence of destructive epithelial malignancy; the possibility of entrapped Müllerian/ovarian surface epithelial elements or focal nonspecific staining should be considered depending on the staining distribution. Focal inhibin positivity may reflect associated luteinized stromal change and, in the absence of diffuse inhibin expression or convincing sex-cord stromal morphology, does not exclude deciduosis. Overall, the bland morphology, complete absence of mitoses, immunoprofile, and pregnancy-associated clinical context together favor ovarian surface deciduosis rather than metastatic signet-ring cell carcinoma or a primary ovarian epithelial malignancy. A final diagnosis of right ovarian serous cystadenoma with ovarian deciduosis was rendered. The clinicopathological findings are summarized in **Table S1**, and the morphological and immunohistochemical discriminators from the principal mimics are presented in **Table S2**. The differential diagnosis of ovarian deciduosis includes several pregnancy-associated and hormonally influenced lesions. Decidualized endometriosis is one of the closest mimics, particularly when endometriotic stromal cells undergo prominent decidual change during pregnancy or progesterone exposure. The presence of endometrial-type glands, endometriotic cyst lining, hemorrhage, hemosiderin-laden macrophages, or residual endometrial-type stroma favors decidualized endometriosis rather than isolated deciduosis. In our case, there was no evidence of hemorrhage, hemosiderin-laden macrophages, or glands, previous indicative history; which ruled out the possibility of decidualized endometriosis. Luteinized stromal proliferations may also enter the differential diagnosis, as they may show large polygonal cells with abundant eosinophilic or lipid-rich cytoplasm. However, these lesions are usually composed of luteinized sex-cord stromal cells and may show positivity for inhibin, calretinin, or SF-1, whereas deciduosis demonstrates decidual stromal differentiation. In our case, inhibin showed only focal positivity. A particularly important malignant mimic is metastatic signet-ring cell carcinoma involving the ovary. This is clinically significant because decidual cells may appear vacuolated and can simulate signet-ring morphology. However, metastatic signet-ring cell carcinoma usually shows infiltrative malignant epithelial cells with intracellular mucin, nuclear atypia, mitotic activity, desmoplastic stromal response, and cytokeratin positivity, often with gastrointestinal marker expression depending on the primary site. In our case, CK7 was only focally positive, and CK20 was negative, excluding the possibility of metastatic signet ring carcinoma. In contrast, deciduosis shows bland polygonal decidual cells, abundant eosinophilic or vacuolated cytoplasm, absence of destructive invasion, absence of significant mitotic activity, and lack of epithelial/mucinous differentiation. Therefore, correlation with pregnancy or hormonal status, careful histomorphological assessment, and a targeted immunohistochemical panel are essential to avoid overdiagnosis of malignancy.

3.4. Management and Outcome

A subsequent systematic investigation including whole body PET-CT, gastric endoscopy & lower GI scopy was planned to exclude potential sites of occult malignancy; however, after the final histopathological diagnosis and immunohistochemical findings supported ovarian deciduosis, these investigations were deferred. No follow-up imaging was performed to document radiological regression. Serum tumour markers assessed during the immediate post-surgery period were within normal limits: CEA: 1.95 ng/ml, CA 19-9: 27.04 U/ml, and CA-125: 12.07 units/ml. The patient also started having regular menses two months after surgery. The patient had no gastrointestinal symptoms, and an opinion from both the medical gastroenterologist and gastrosurgeon was obtained, who advised that no active management was required from their side. The patient has been under ongoing follow-up for the last one year and remains asymptomatic.

4. Hypothesis of the Study

This report advances two complementary sets of hypotheses, one biological and one informatic, both centred on the recurring problem of a benign, regressing lesion being mistaken for malignancy.

4.1. Biological hypotheses

We hypothesize that the ovarian nodules in this patient arose through progesterone-driven decidual transformation and that two mechanisms can account for such lesions. The endometriosis-derived hypothesis proposes that pre-existing ectopic endometrial stroma decidualized in response to the gestational hormonal surge; the subcoelomic-metaplasia hypothesis proposes that pluripotent mesenchymal cells beneath the ovarian surface epithelium, sharing a coelomic origin with the Müllerian system, transformed directly into decidual cells under progesterone stimulation. The presence of surface and subserosal deposits over a background of normal ovarian stroma, without identifiable endometriotic glands, is more consistent with the metaplastic pathway in this case, although the two mechanisms are not mutually exclusive. A corollary testable prediction is that such lesions should regress within four to six weeks of delivery as progesterone falls, an expectation that, if confirmed on interval imaging or follow-up, would itself argue strongly against malignancy and against any therapeutic intervention.

4.2. Informatic hypotheses

The central informatic hypothesis is that the diagnostic-error risk posed by benign mimics is reducible through digital pathology infrastructure rather than through expanded surgery. Specifically, we hypothesize: (i) that whole-slide images of decidualized nodules carry quantifiable morphometric and texture signatures, uniform nuclear size, low nuclear-to-cytoplasmic ratio, absent mitotic figures, abundant eosinophilic cytoplasm, that a computer-aided classifier can use to discriminate decidua from serous carcinoma, mesothelioma, and metastatic carcinoma with high negative predictive value; (ii) that encoding the discriminators in **Table S2** as explicit decision-support logic within a synoptic reporting template will lower the rate of misclassification at intra-operative frozen section, where time pressure and sampling limitations are greatest; and (iii) that aggregating rare cases such as this one into a unified,

standardized registry will supply the labelled data that single institutions cannot accumulate, thereby making robust models for uncommon benign entities feasible.

5. Medico-Informatics Perspective

Digitizing the diagnostic slides, as was done here, converts a perishable glass artefact into a durable, shareable, and computable object. For a rare mimic such as deciduosis, whole-slide imaging permits immediate second opinion, preserves the exact field on which the diagnosis rested, and provides the substrate for quantitative analysis. Calibrated scale bars (1000, 200, and 70 μm in **Figures 2–4**) anchor measurements that are otherwise subjective at the microscope. In a digital pathology-based approach, useful image-analysis features for ovarian deciduosis would include nuclear size and shape, nuclear size variation, nuclear-to-cytoplasmic ratio, chromatin texture, and mitotic activity. The morphology of decidua is, in computational terms, highly regular. Decidual cells usually show large polygonal cells with abundant cytoplasm, monomorphic bland nuclei, low nuclear-to-cytoplasmic ratio, smooth chromatin, and absent or rare mitoses. These are the features that morphometric and deep-learning classifiers can use, suggesting that a benign-versus-malignant triage model could identify decidua-like nodules for conservative confirmation rather than radical action. In contrast, malignant mimics are more likely to show marked nuclear pleomorphism, irregular nuclear contours, increased nuclear-to-cytoplasmic ratio, coarse chromatin, increased mitotic activity, atypical mitoses, necrosis, and infiltrative growth. Thus, digital image analysis may help highlight benign decidual morphology, but such tools should be best used as a safety net that increases negative predictive value, not as an autonomous diagnostician, and the final diagnosis should still rely on routine histology, clinical correlation, and immunohistochemistry. The findings in **Table S1** and the key distinguishing features in **Table S2** can be recorded in a structured format rather than as free text alone. If these fields are linked to standard medical terminologies such as SNOMED CT and ICD-O, the diagnosis becomes easier to search, compare, share, and audit across different systems. This approach can also support automated quality checks. For example, if a peripartum patient has ovarian surface nodules but the cells show no atypia and no mitotic activity, the system could prompt the pathologist to consider a benign pregnancy-related lesion such as deciduosis before diagnosing malignancy. This would be of great help while reporting such cases at the frozen section. Sharing digitized slides and structured pathology reports in a standard format can make expert consultation easier and faster, especially when the diagnosis is rare or difficult. It would also help create shared registries of uncommon benign mimics such as deciduosis. This is important because a single centre may see very few cases of ovarian deciduosis, making it difficult to build experience or train digital pathology models. By safely pooling cases from multiple centres while protecting patient privacy, larger and more useful datasets can be created. The same system can also help with follow-up. For example, if deciduosis is expected to regress after pregnancy, later clinical or imaging findings can be added to the record. This follow-up information can then support the original benign diagnosis and help improve future diagnostic confidence. These advantages will be useful only if digital pathology tools are used carefully and responsibly. A model trained mainly on common cancers may wrongly suspect malignancy when it sees a rare benign condition such as deciduosis. Limited case numbers, poor-quality annotations, and differences between slides from different centres can also affect the reliability of the results. Therefore, the output of any algorithm should be used only as a supportive aid, not as a final diagnosis. The final interpretation must remain with the pathologist. Before such tools are used in clinical practice, they should be properly validated, regularly audited, and used with clear responsibility and accountability.

6. Conclusion

Ovarian deciduosis is a benign, hormone-driven, self-limiting condition that is usually encountered during pregnancy or the peripartum period. Its clinical significance lies in its ability to mimic malignancy. Gross nodularity and prominent decidual cells may raise concern for carcinomatosis, metastatic carcinoma, or mesothelioma, potentially leading to unnecessary radical surgery or adjuvant therapy. Accurate diagnosis requires careful attention to the clinical setting, bland cytology, absence of mitotic activity, lack of destructive invasion, and a supportive immunohistochemical profile. Correct recognition of this entity can therefore convert a worrying intraoperative impression into a benign diagnosis requiring no active treatment. This case also demonstrates how digital pathology and medical informatics may strengthen diagnostic safety. Whole-slide imaging, structured reporting, standardized terminology, computer-assisted analysis, decision-support tools, and shared registries can all help improve recognition of rare benign mimics such as deciduosis. These systems are not a substitute for expert pathology review, but they can provide an additional safeguard against premature or irreversible treatment decisions. Greater awareness of ovarian deciduosis among clinicians and pathologists, supported by responsible digital pathology infrastructure and human-supervised decision support, may help prevent overtreatment in pregnant and peripartum patients.

7. Disclosure Statements

7.1. Author Contribution

NBM: Conceptualization, research design, and final approval of the manuscript. **MB:** Data analysis and interpretation, critical revision of the manuscript. **VU:** Data collection, data curation, and data analysis. **SM:** Data analysis and interpretation. **SS:** Clinical data collection and patient management. All authors reviewed the manuscript, and the corresponding author has read and approved the final version of the manuscript.

7.2. Declaration of Generative AI

During the preparation of this manuscript, the authors used Grammarly and QuillBot solely for grammar correction, language editing, and improvement of sentence clarity. These tools were not used to generate scientific content, analyze data, interpret results, or formulate conclusions. The authors carefully reviewed and edited all changes and take full responsibility for the accuracy, originality, and integrity of the manuscript.

7.3. Ethics approval (for clinical/animal studies)

Institutional Ethics Committee approval was not required for this anonymized single-patient case report in accordance with institutional policy. The manuscript has been prepared in accordance with the ethical principles of the Declaration of Helsinki. Written informed consent for publication was obtained from the patient.

7.4. Informed Consent Statement

Written informed consent was obtained from the patient for publication of this case report and any accompanying images. All identifying information has been removed to protect the patient's privacy.

7.5. Data Availability Statement

All data generated or analyzed during this study are included in this published article. Additional information is available from the corresponding author upon reasonable request, subject to patient confidentiality and institutional policies.

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7.8. Conflicts of Interest

The authors declare that they have no known financial, personal, academic, or other relationships that could inappropriately influence, or be perceived to influence, the work reported in this manuscript. The authors confirm that there are no competing interests to declare.

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7.10. Supplementary Information

Supplementary material for this article is available at https://jomi.aayvu.com/SuppFile/224896/1/ .

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8. Reference

Bellizzi AM. (2020), An Algorithmic Immunohistochemical Approach to Define Tumor Type and Assign Site of Origin, *Adv Anat Pathol,* 27(3):114-163. **doi:**10.1097/PAP.0000000000000256. **PMID:** 32205473.

Eloy C, Seegers P, Bazyleva E, Fraggetta F. (2024), The 1 million words pathology report or the challenge of a reproducible and meaningful message, *ESMO Real World Data Digit Oncol,* 4:100044. **doi:**10.1016/j.esmorw.2024.100044. **PMID:** 41647787.

Kaneko M, Nozawa H, Rokutan H, Murono K, Ushiku T, Ishihara S. (2021), Ectopic decidua of the appendix: a case report, *Surg Case Rep,* 7(1):117. **doi:**10.1186/s40792-021-01204-9. **PMID:** 33973073.

Kennedy NT, Sebastian A, Thomas DS, Thomas A, Gupta M, Kumar RM, Peedicayil A. (2019), Diagnostic Accuracy of Frozen Section and Its Influence on Intraoperative Management of Indeterminate Epithelial Ovarian Tumors, *Indian J Surg Oncol,* 10(2):268-273. **doi:**10.1007/s13193-018-00869-3. **PMID:** 31168246.

Kinra P, Sen A, Sharma JC. (2006), Ectopic Decidual Reaction: A Case Report, *Med J Armed Forces India,* 62(3):280-1. **doi:**10.1016/S0377-1237(06)80022-5. **PMID:** 27407910.

Mangla M, Nautiyal R, Shirazi N, Pati B. (2021), Ectopic Cervical Deciduosis: A Rare Cause of Antepartum Hemorrhage in Mid Trimester, *Eurasian J Med,* 53(2):152-154. **doi:**10.5152/eurasianjmed.2021.20163. **PMID:** 34177301.

Masjoodi S, Anbardar MH, Shokripour M, Omidifar N. (2025), Whole Slide Imaging (WSI) in Pathology: Emerging Trends and Future Applications in Clinical Diagnostics, Medical Education, and Pathology, *Iran J Pathol,* 20(3):257-265. **doi:**10.30699/ijp.2025.2044210.3367. **PMID:** 40746923.

McCluggage WG. (2006), My approach to the interpretation of endometrial biopsies and curettings, *J Clin Pathol,* 59(8):801-12. **doi:**10.1136/jcp.2005.029702. **PMID:** 16873562.

Selak N, Cerkez I, Iljazovic E, Sadikovic A, Konrad Custovic M, Mustedanagic Mujanovic J, Ahmetovic Karic E. (2025), Extraovarian fibrothecomas: Two case reports and comprehensive review of ovarian sex cord-stromal fibroma-thecoma tumors, *Biomol Biomed,* 26(3):509-524. **doi:**10.17305/bb.2025.12816. **PMID:** 40828576.

Sorokin P, Nikiforchin A, Panin A, Zhukov A, Gushchin V, Kurtser M. (2020), Diffuse Ectopic Deciduosis Imitating Peritoneal Carcinomatosis with Acute Abdomen Presentation: A Case Report and Literature Review, *Case Rep Obstet Gynecol,* 2020:8847082. **doi:**10.1155/2020/8847082. **PMID:** 33062356.

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