Dedifferentiated endometrioid adenocarcinoma: Rare, aggressive and frequently misdiagnosed neoplasm

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Introduction:

•Dedifferentiated endometrioid adenocarcinoma (DEC)is a rare and aggressive form of cancer.

•It is composed of undifferentiated and differentiated components, typically of FIGO grade1 or 2 endometrioid carcinoma.

•It was previously described by Silva et al. in 2006 and in 2014, for the first time, it was introduced in WHO classification of the female genital tract.

•Even as little as 5 % to 10% of the undifferentiated component in an otherwise low grade endometrial carcinoma can be associated with aggressive behavior, therefore it is relevant to recognize this tumor type and not misinterpret the solid sheet like growth as the solid component of a pure grade 1 or grade 2 endometrioid carcinoma.

Case Summary :

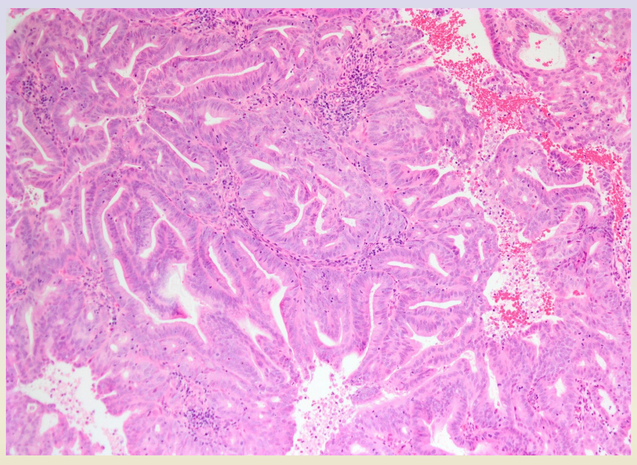
• A 75 year old female presented with pelvic pain. No other symptoms.

USG scan:

•Enlarged uterus with a grossly distended endometrial cavity and a possible mass measuring 30x28x32mm.

ENDOMETRIAL BIOPSY:

• showed well differentiated FIGO grade 1 endometrioid adenocarcinoma.



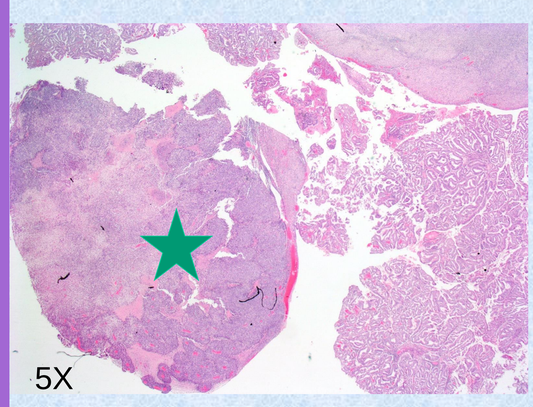
•Following which total abdominal hysterectomy with bilateral salphingo-oophorectomy was performed.

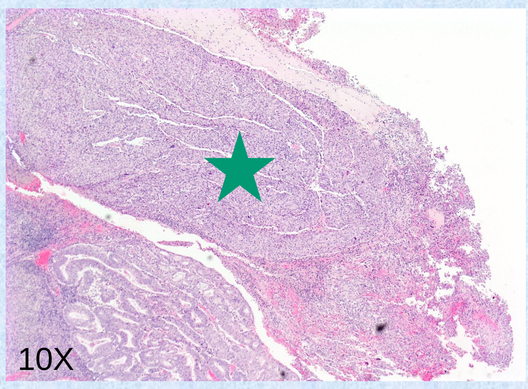
Gross:

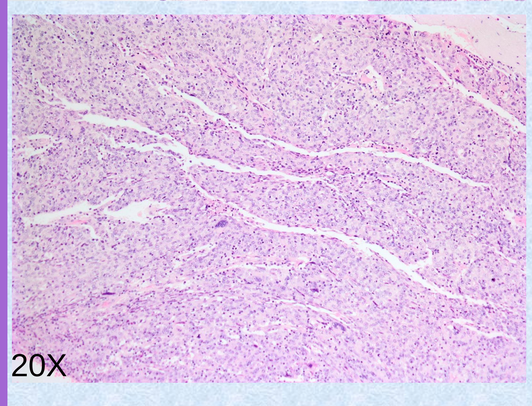
•Uterus showed a large polypoid mass measuring 30 x10mm extending up to less than inner half of the myometrial wall.

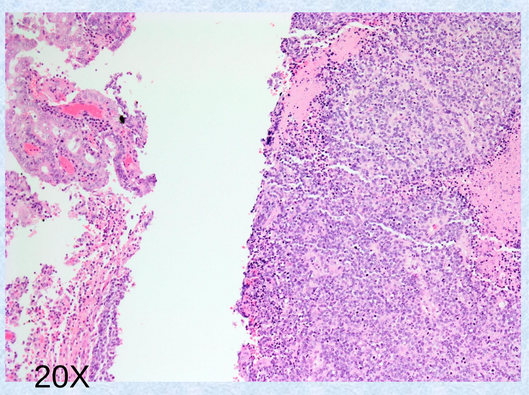
Microscopy:

- Well differentiated endometrioid adenocarcinoma with an undifferentiated solid malignant component, comprising 10-20% of the tumour.
- Solid areas are composed of sheets of non-cohesive round to ovoid cells with vesicular chromatin and scant cytoplasm.(star)
- Mitotic activity is high (>25/ 10 HPF) and pleomorphic nuclei noted.



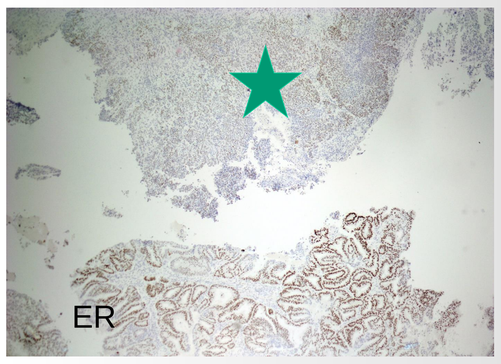


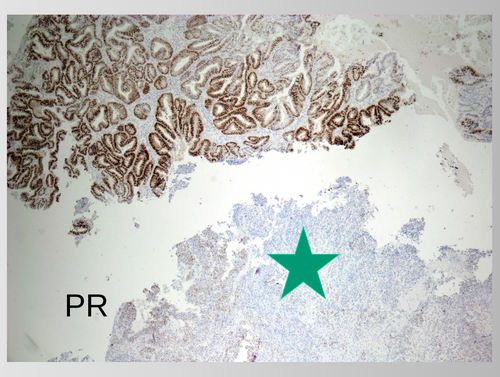


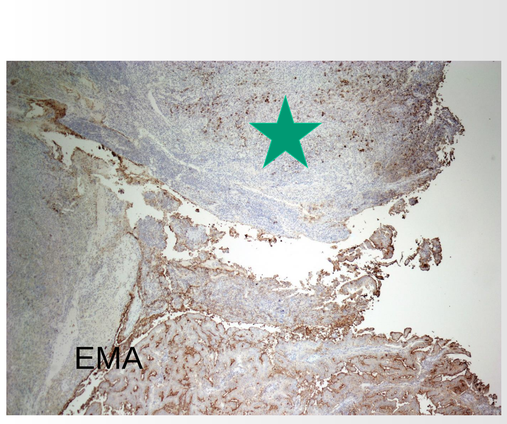


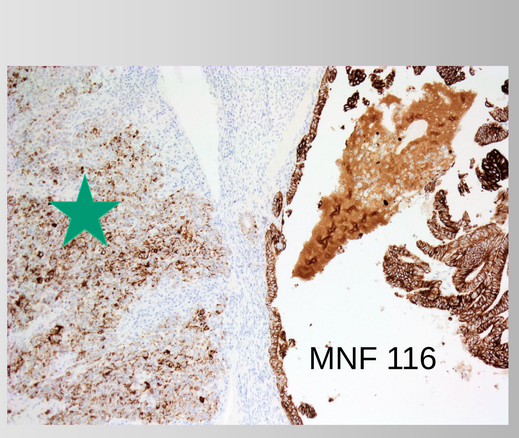
Immunohistochemistry-

•Undifferentiated component shows complete or near-complete absence of ER, PR, PAX8, cytokeratin, and EMA.
•Neuroendocrine markers, desmin and SMA are negative.
•p53 staining is wild type. There is no loss of MMR proteins.









Discussion:

▪ DEC is defined as a tumor wherein well differentiated and undifferentiated components are present.

▪The transition between the two tumor component is abrupt with a sharp border.

▪As the pathological diagnosis of DEC has only been established recently, the clinical features of the disease, including incidence,treatment and prognosis are unknown.

▪The following entities should be considered in the differential diagnosis; high grade endometrial carcinoma, serous carcinoma , malignant mixed mullerian tumor (MMMT) , undifferentiated endometrial sarcoma, poorly differentiated neuroendocrine carcinoma or malignant lymphoma.

▪In grade 3 endometrial carcinoma, the tumor cells are morphologically similar to carcinoma cells in glandular areas; solid sheets or nests and conspicuous glandular structures might also coexist.

▪The expression of desmin, caldesmon and SMA is the key for differentiating sarcomas from the undifferentiated component of DEC.

▪MMMT is biphasic, composed of both high grade components ; carcinoma component is mostly high grade serous carcinoma.

▪The undifferentiated component can show focal neuroendocrine staining. In contrast, neuroendocrine carcinoma show strong and diffuse staining for neuroendocrine markers.

▪Molecular studies like INI1 (SMARCB1),BRG1 (SMARCA4) and ARIDIA (BAF250a) might help to distinguish grade 3 endometrial carcinoma from DEC.

▪For this patient, subsequently, laproscopic bilateral pelvic and para-aortic lymph node sampling, infra-colic omental biopsy was performed which was negative.

▪The patient is disease free 1 year after the initial surgery.

Conclusion:

•Preoperative diagnosis of DEC is difficult on only endometrial curettage.

•Extensive sampling , high awareness of the morphologic characteristics of this tumor and IHC studies are essential for accurate diagnosis.

•Due to variable therapeutic approaches and prognostic implications, accurate diagnosis of DEC in the endometrium is crucial.

DECLARATION OF CONFLICT OF INTEREST-

All authors confirm that this work is not affiliated with any commercial sponsor or external organisation that could affect independence or objectivity.

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