

Lesion Characteristics and Types of Lesions

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What is the difference between a papillary projection and a mural nodule?

What is an incomplete septum?

Do you classify an endometrioma with multiple smooth septations as O-RADS MRI 2 or O-RADS MRI 3?

Do you classify a dermoid with multiple septations as O-RADS MRI 2 or O-RADS MRI 3?

How do you know when a component is a Rokitansky nodule versus a concerning amount solid tissue in a fatty lesion?

Do you classify hemorrhagic cysts as O-RADS MRI 2 or 3?

In an ovarian lesion with solid components that only have dark T2 and dark DWI signal intensity (e.g. fibroma), do you still perform the contrast enhanced portions of the exam?

If a unilocular or multilocular cystic adnexal lesion has a solid component that is dark signal on T2 and dark signal on DWI, is the lesion assigned an O-RADS MRI Score 2 regardless of the cystic component?

In an ovarian lesion that has both solid components with dark T2 and dark DWI signal intensity and other solid components with non-dark T2 and DWI signal intensity (ie. high or intermediate signal intensity), do you still assign an O-RADS MRI Score 2?

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FAQ-196: What is the difference between a papillary projection and a mural nodule?

Papillary projection: Protrusion that has an acute angle with the cyst wall, septation or surface of the ovary, and can have a *visible branching architecture* and must be at least 3mm

Mural nodule: Protrusion that has a rounded contour with an *outwardly convex borders and an obtuse angle* in relation to the cyst wall or septation and must be at least 3mm

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FAQ-197: What is an incomplete septum?

Septation that is *discontinuous* and does not run all the way from one side of the cyst wall to the other.

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FAQ-198: Do you classify an endometrioma with multiple smooth septations as O-RADS MRI 2 or O-RADS MRI 3?

The number of locules governs risk stratification for cysts which do not contain lipid. Classic unilocular endometrioma is **O-RADS MRI 2**. Endometriomas with multiple smooth septations and no solid tissue are classified as **O-RADS MRI 3**, although in the radiology report the diagnosis of multilocular endometrioma may be given. If there is enhancing solid tissue (irregular septations, nodules, papillary projections or larger solid portion), the lesion is classified based on the enhancement pattern of the solid tissue (**O-RADS MRI 4 or 5**).

Note: Care should be taken not to misdiagnose multiple adjacent UNILOCULAR endometriomas as a multilocular endometrioma. Multiple adjacent UNILOCULAR endometriomas are scored **O-RADS MRI 2** and a MULTILOCULAR endometrioma is scored **O-RADS MRI 3**.

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FAQ-199: Do you classify a dermoid with multiple septations as O-RADS MRI 2 or O-RADS MRI 3?

Dermoids can have enhancing smooth or irregular septations and an enhancing Rokitansky nodule, and would still be classified as an **O-RADS MRI 2**. However if the dermoid has a large amount of enhancing solid tissue that is not compatible with a Rokitansky nodule, the lesion is classified as **O-RADS MRI 4**.

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FAQ-200: How do you know when a component is a Rokitansky nodule versus a concerning amount solid tissue in a fatty lesion?

A *Rokitansky nodule enhances* and is associated with *fat*. Commonly a Rokitansky nodule is adjacent to septations within the dermoid.

There is a paucity of data on how much solid tissue should raise suspicion. In a dermoid that has undergone degeneration, the malignant solid tissue usually does not contain fat and there is more solid tissue than expected for a Rokitansky nodule. The malignant solid tissue also tends to be within the wall of the lesion.

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FAQ-201: Do you classify hemorrhagic cysts as O-RADS MRI 2 or 3?

In pre-menopausal women with a hemorrhagic cyst that does not have an enhancing wall

- $\leq 3\text{cm}$ can be assigned an O-RADS MRI Score 1
- $> 3\text{cm}$ can be assigned an O-RADS MRI Score 2

In pre-menopausal women with a hemorrhagic cyst that does have an enhancing wall

- $\leq 3\text{cm}$ can be assigned an O-RADS MRI Score 1
- $> 3\text{cm}$ can be assigned an O-RADS MRI Score 3

In post-menopausal women

- If the hemorrhagic cyst does not have an enhancing wall, it can be assigned an O-RADS MRI Score 2, regardless of size
- If the hemorrhagic cyst has an enhancing wall, it can be assigned an O-RADS MRI Score 3, regardless of size

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FAQ-202: In an ovarian lesion with solid components that only have dark T2 and dark DWI signal intensity (e.g. fibroma), do you still perform the contrast enhanced portions of the exam?

Yes, contrast is important because not all dark signal on T2 and DWI represents solid tissue. Debris, clot, hemosiderin can all appear markedly hypointense, but these do not enhance and are not considered solid tissue. If the lesion is of uniformly dark signal on T2 and DWI, TIC curves do not need to be generated, the lesion can be scored as O-RADS MRI 2, and the lesion is likely a fibroma. If there is no enhancement, the finding is likely debris or blood.

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FAQ-203: If a unilocular or multilocular cystic adnexal lesion has a solid component that is dark signal on T2 and dark signal on DWI, is the lesion assigned an O-RADS MRI Score 2 regardless of the cystic component?

An adnexal lesion that has a dark T2 / dark DWI solid component and a unilocular or multilocular cystic component can be assigned an O-RADS MRI Score 2. Smooth septations can be present, however if the septations are irregular or there is solid tissue that is not homogeneously low signal, the lesion should be scored according to the enhancement of the irregular septations or solid tissue.

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FAQ-204: In an ovarian lesion that has both solid components with dark T2 and dark DWI signal intensity and other solid components with non-dark T2 and DWI signal intensity (ie. high or intermediate signal intensity), do you still assign an O-RADS MRI Score 2?

If there is solid tissue that has a component with high or intermediate signal intensity on T2 and DWI, the lesion should be scored according to the enhancement of the non-dark solid tissue component (ie. the solid tissue component that is high or intermediate signal). In this case, the non-dark solid tissue dictates the O-RADS MRI score.

Care should be taken with solid tissue that appears to have low signal components on T2, as some papillary projections and nodules related to cancers will have low signal components on the T2 but will be high signal on the DWI. Furthermore, careful windowing

will help identify papillary projections, which often have a low signal stalk, with small amounts of higher signal glandular tissue.

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