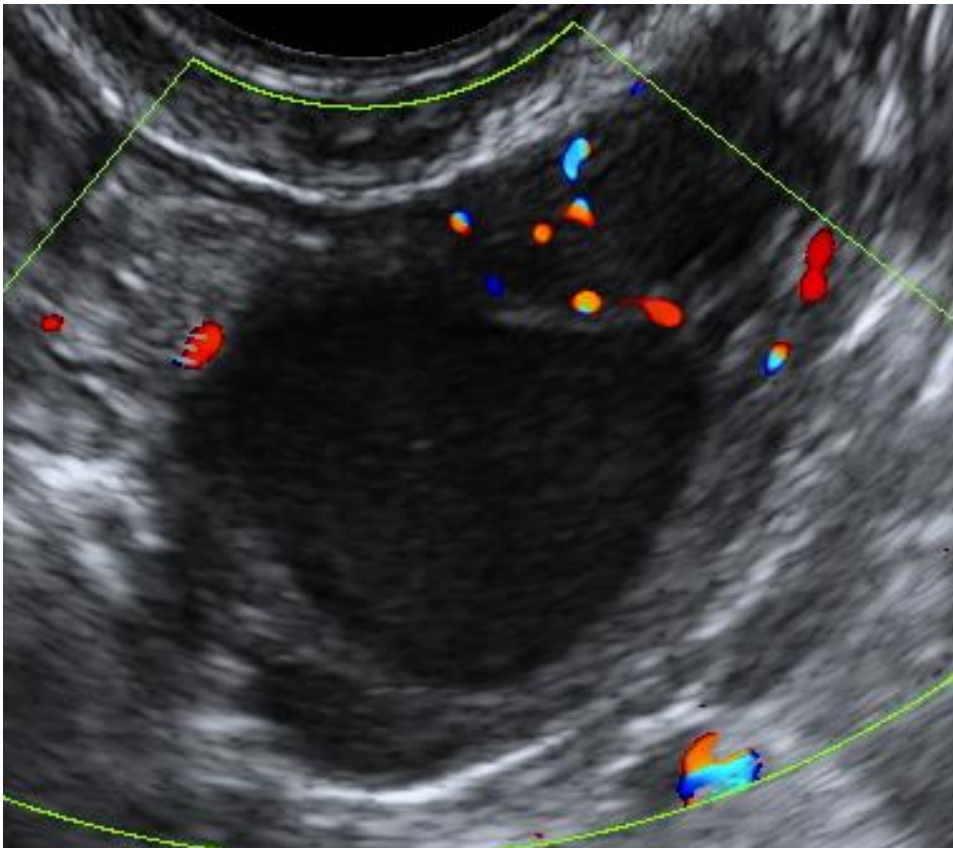


# Endometrioma

Endometriosis is a benign estrogen dependent disease that is defined by the presence of endometrial glandular tissue outside the uterus. It is most often localised in the ovary giving rise to a clear demarcated ovarian cyst, the **endometrioma**:

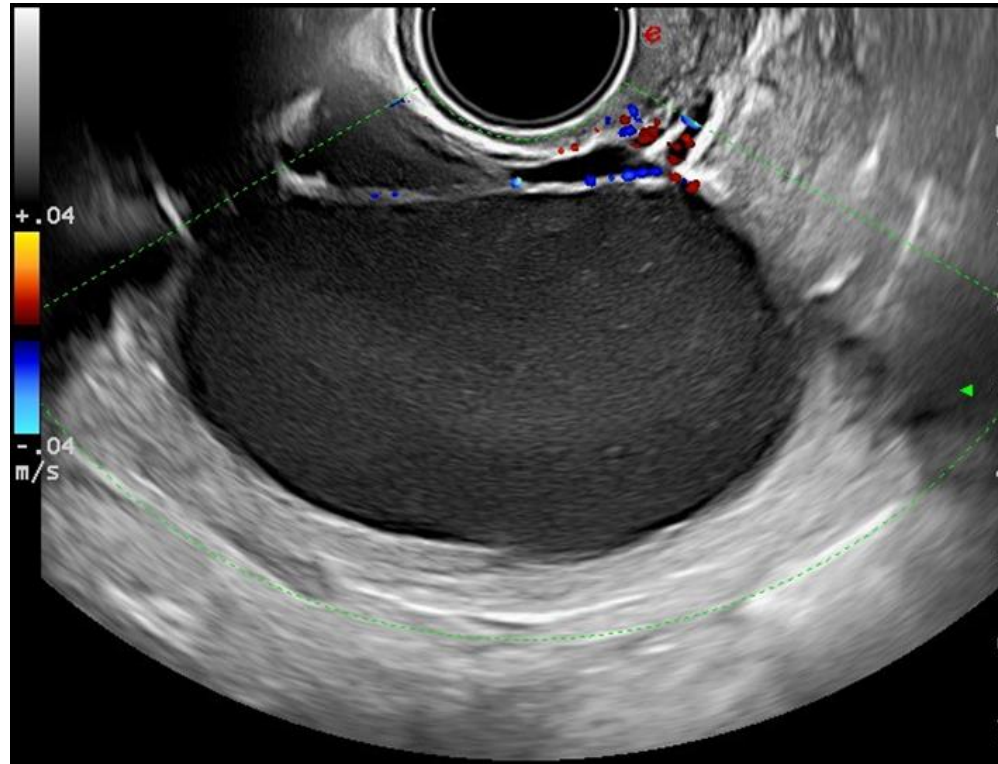


a cystic lesion that contains altered blood.

Because of the dark colour of the cyst content, it is often referred as 'chocolate cyst'.

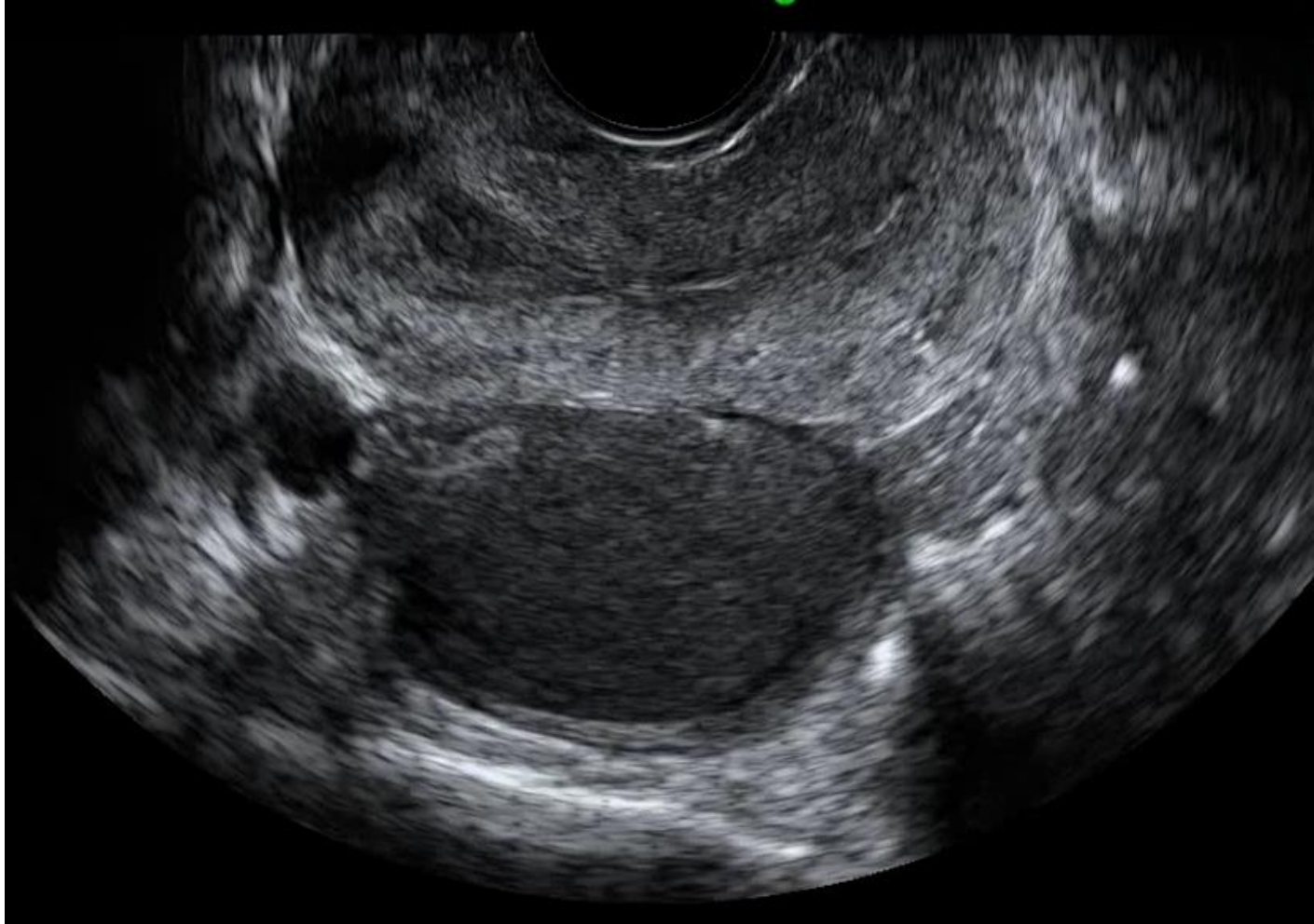


# Ultrasound characteristics of “typical” endometrioma



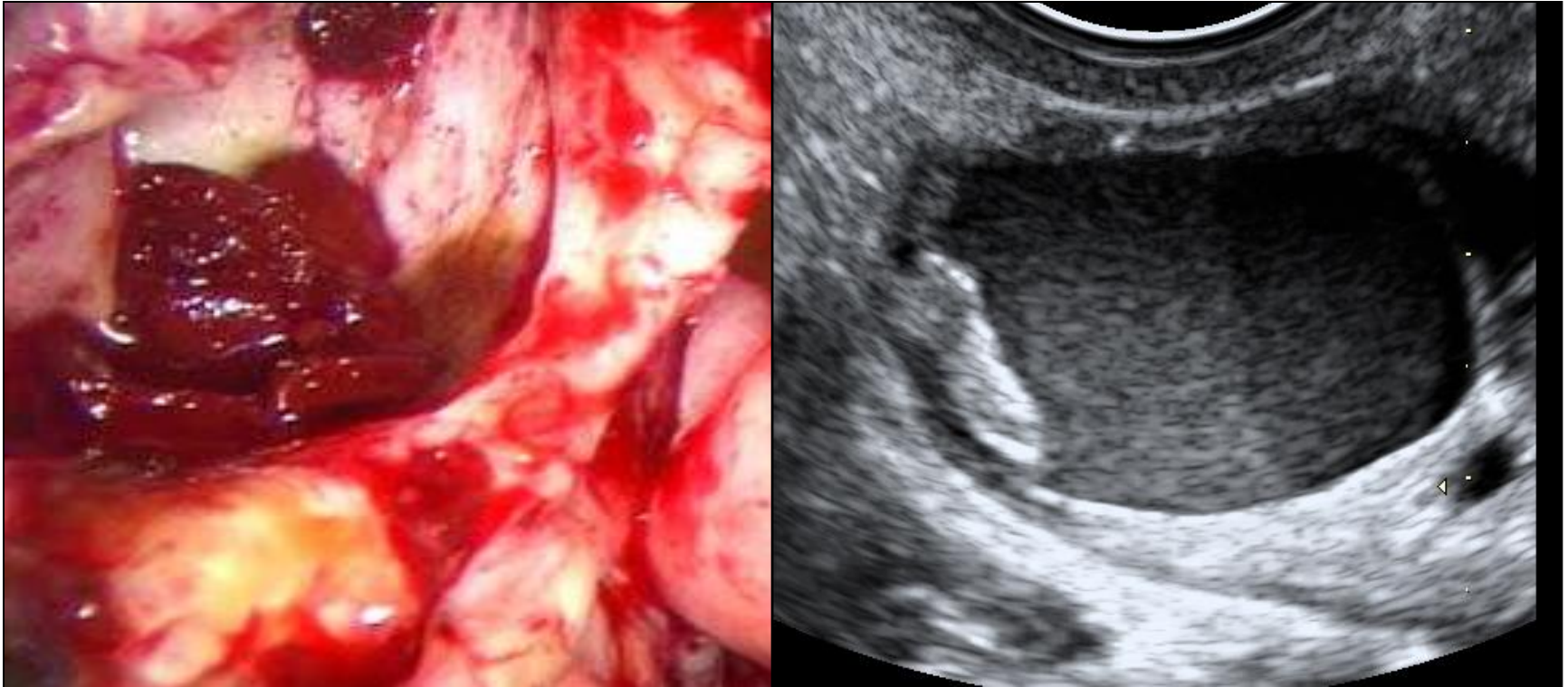
“Typical” endometrioma is a cyst with 1 to 4 locules with a low-level echogenicity representing old blood in the cyst cavity (commonly termed ‘ground glass’) without any papillary proliferations...

...with no internal flow at Color Doppler evaluation.



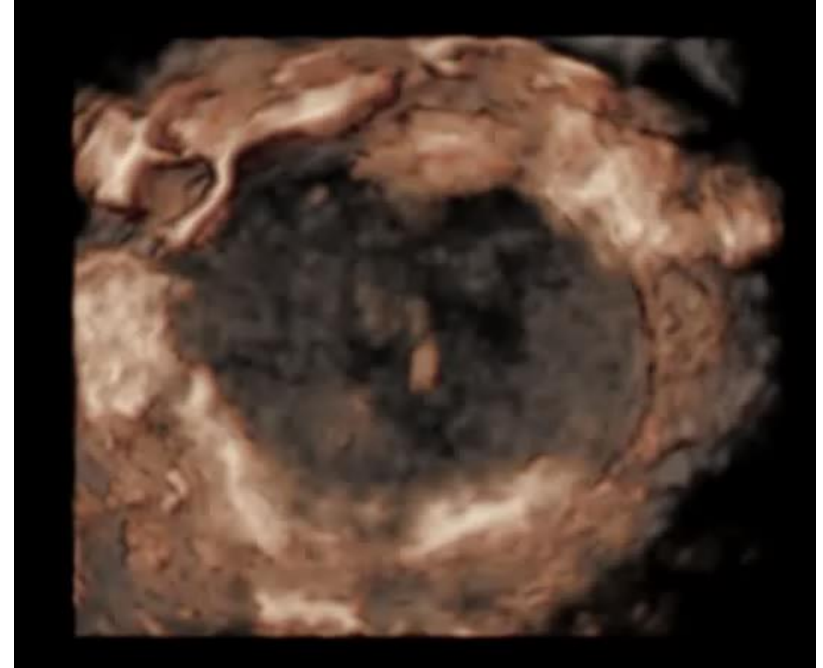


# Ultrasound characteristics of “atypical” endometrioma-1



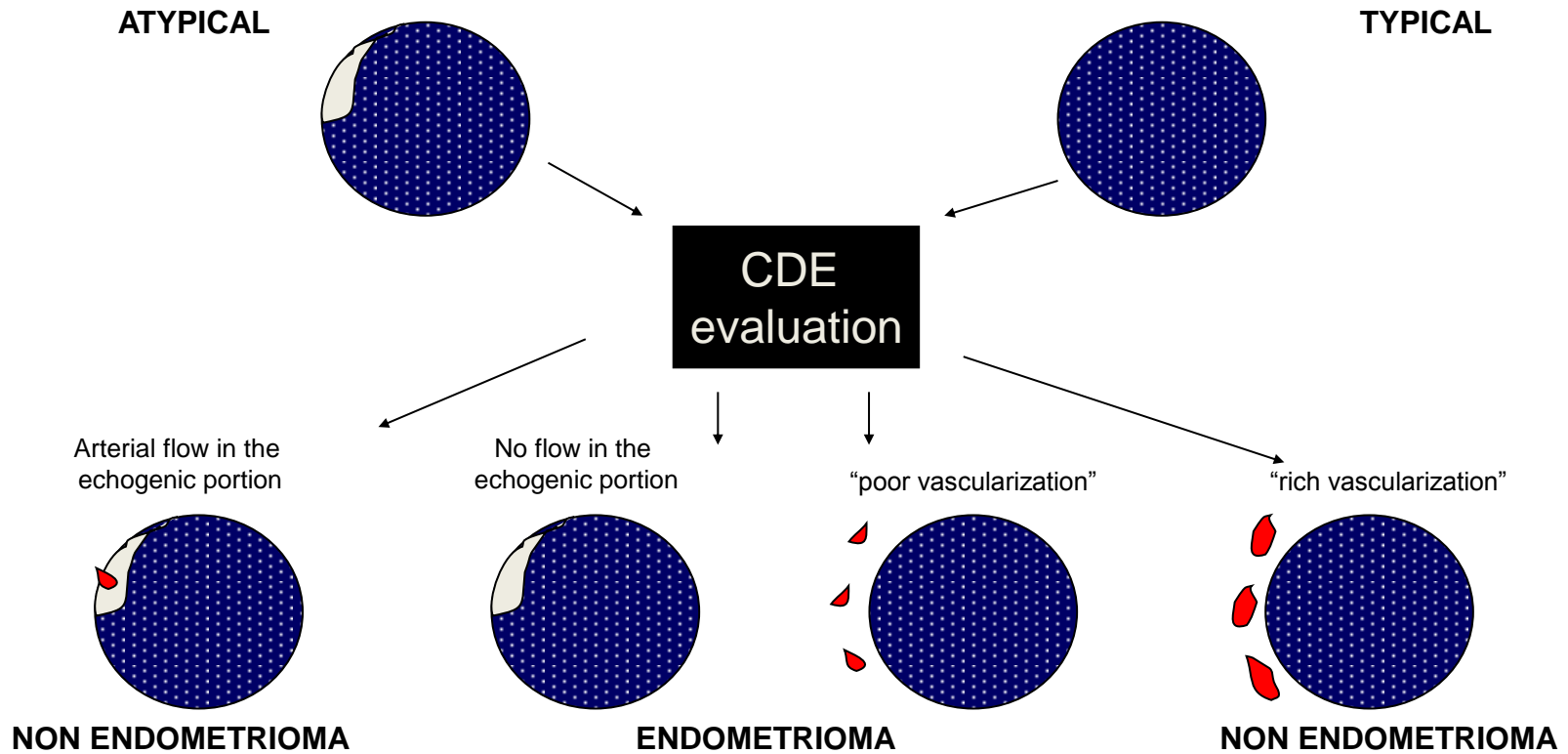
Endometriomas may also have ‘atypical’ features (in a minority of reports): multilocular ground glass masses or cysts with heterogeneous echogenicity of the cyst content, with internal blood clots with fibrin or anechoic cysts...

## Ultrasound characteristics of “atypical” endometrioma-2

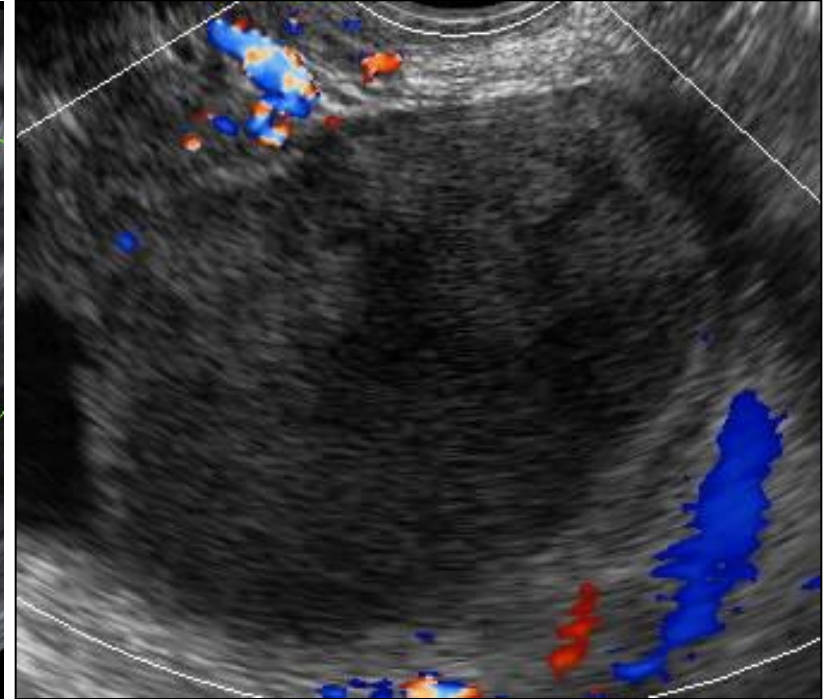
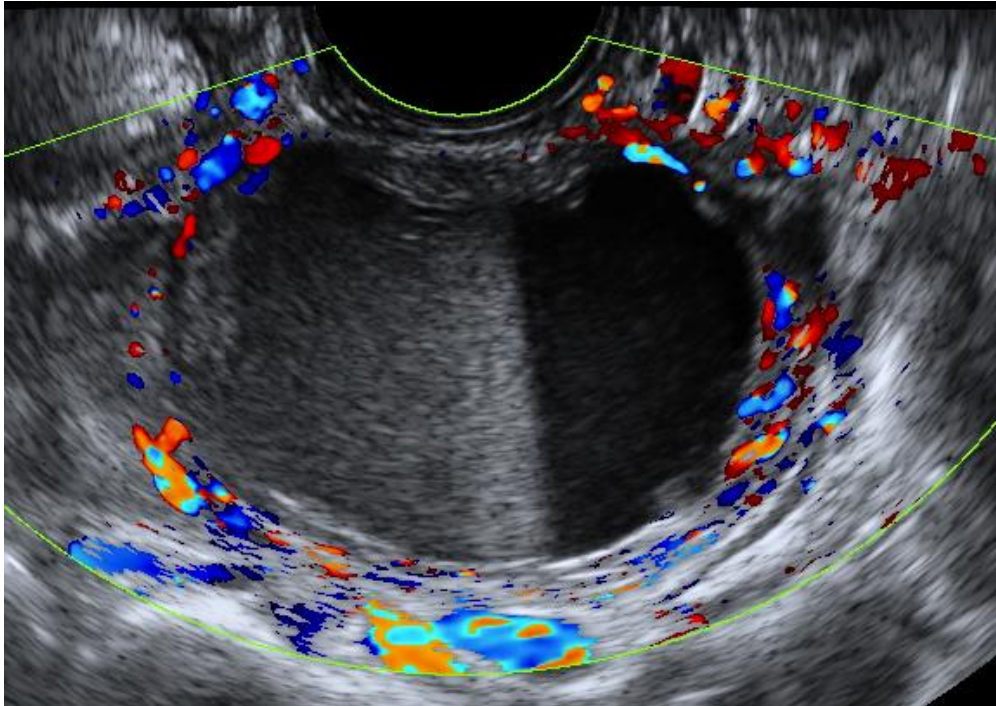


...and frequently debris/ amorphous material (blood clots, fibrin, calcifications) may give the false impression of a solid component/ solid papillary projections. The lack of blood flow can help in the discrimination.

# Color Doppler evaluation in the discrimination between endometriosis and other adnexal masses



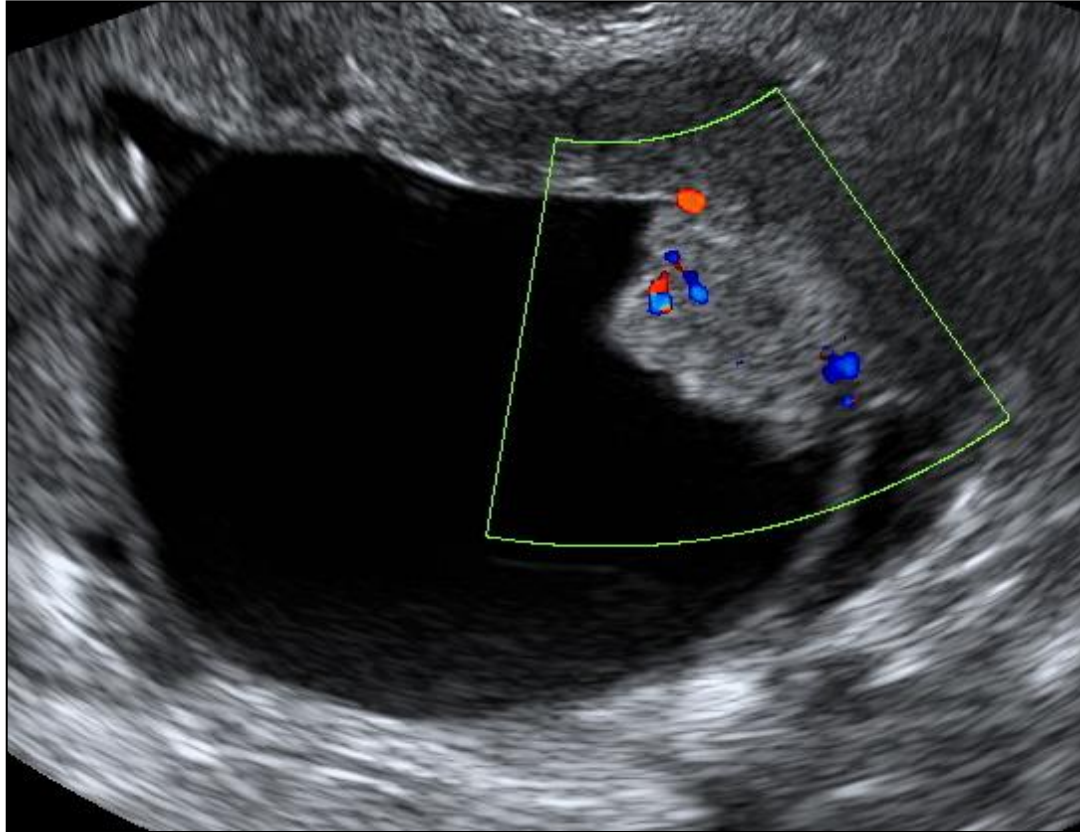
# Color Doppler Evaluation-1



Color Doppler evaluation is useful to differentiate “atypical” endometriotic cysts with heterogeneous echogenicity of the cyst content and no vascularization from...



## Color Doppler Evaluation-2



... ovarian cancer with papillary projections vascularized at Color Doppler.

## Ultrasound diagnosis

Ultrasound diagnosis of endometriomas is quite easy. The optimal rule to detect endometriomas is:

'an adnexal mass in a premenopausal patient with ground glass echogenicity of the cyst fluid, one to four locules and no papillations with detectable blood flow' (Van Holsbeke 2010)

We must be careful when we scan postmenopausal patients because in this age group there is a higher risk of malignancy especially in 'atypical' endometriomas.

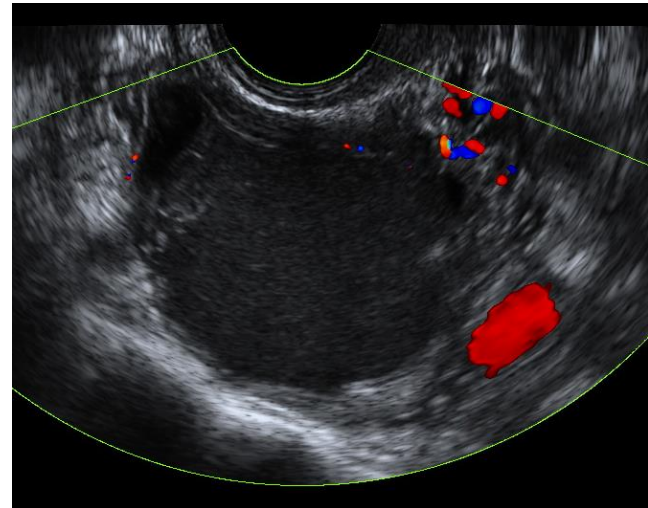


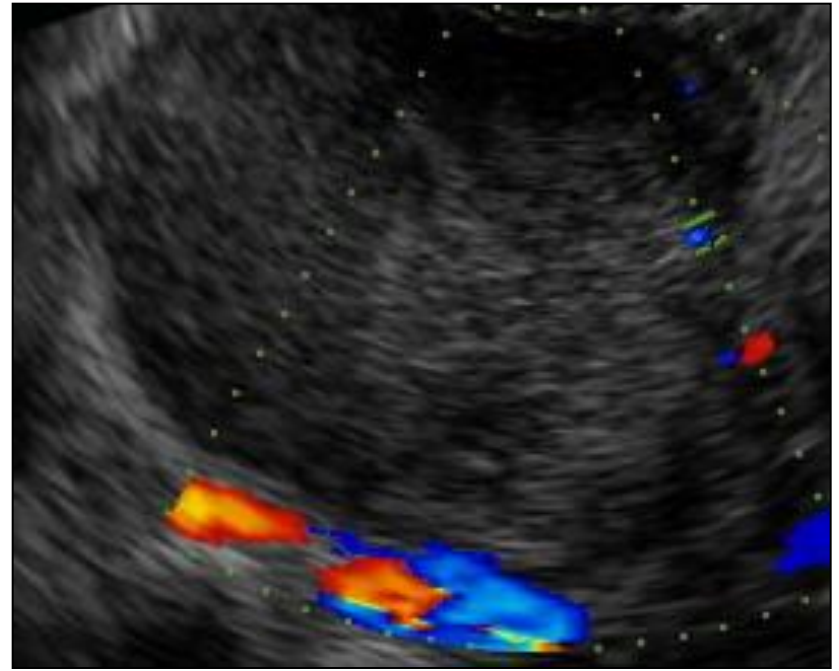
Image by Testa A.C.

# Endometriosis and cancer

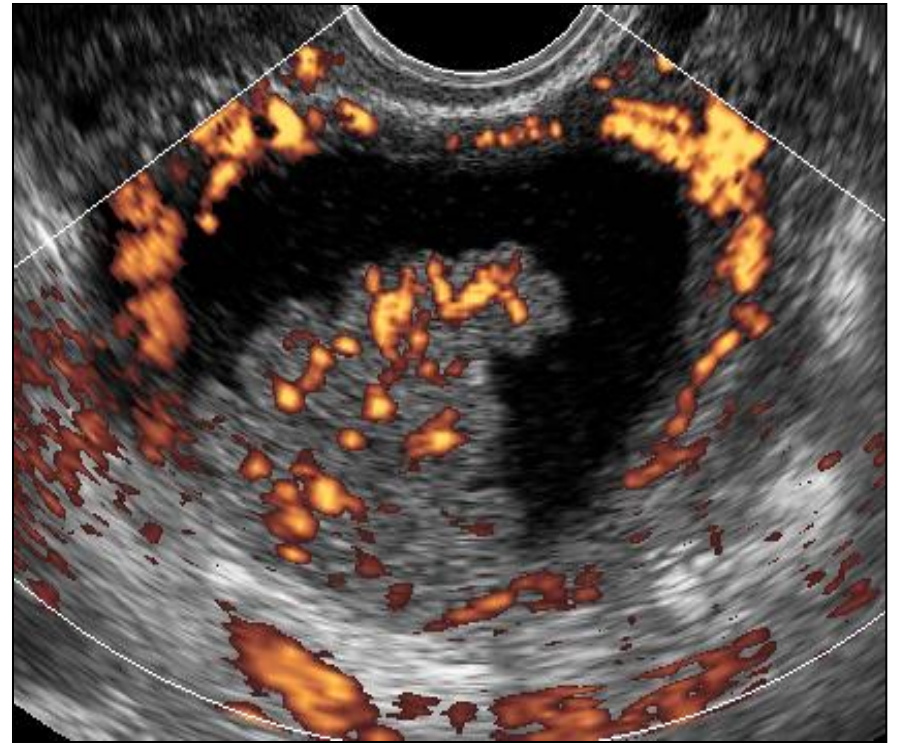
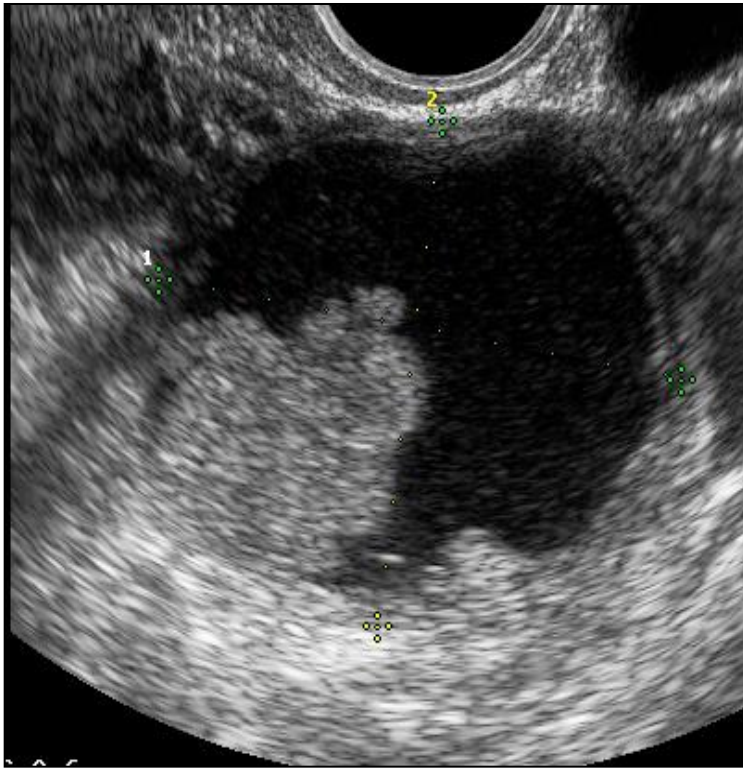
**Prevalence = 0.3-0.8%**

1925 Sampson initially described malignant transformation in endometriosis and reported criteria to diagnose “ovarian carcinoma arising in endometriosis”.

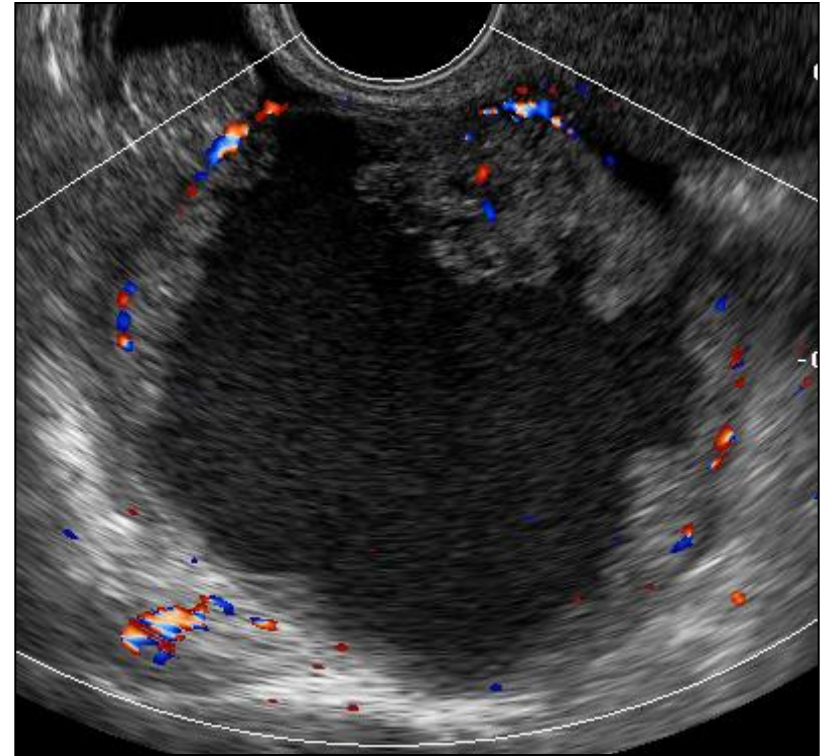
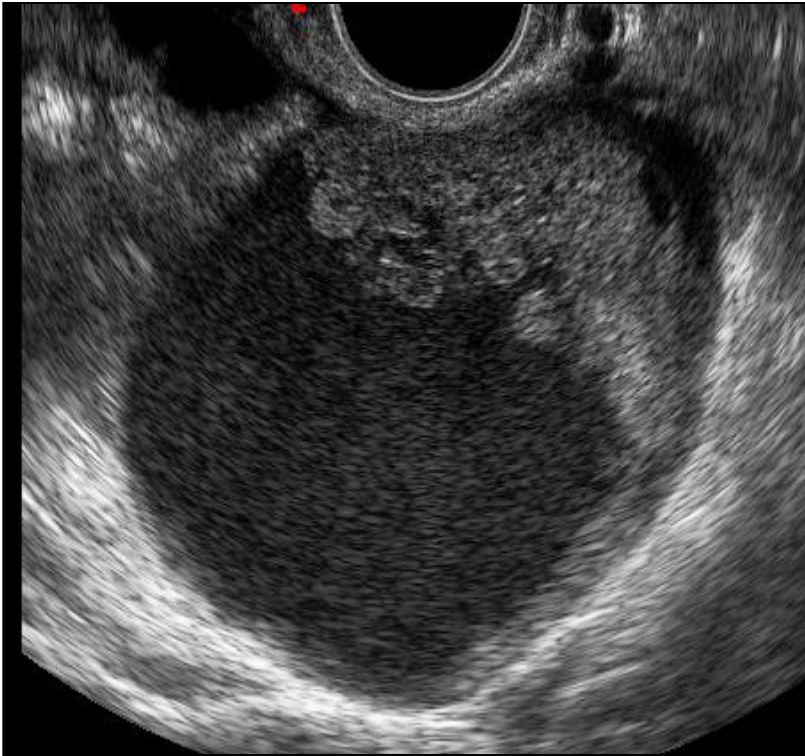
- ✓ Contemporary presence of endometriotic and malignant tissue in the same ovary
- ✓ Presence of stromal endometrial tissue similar to epithelial glands
- ✓ Presence of transitional areas between endometriosis and malignant tissue



Endometriotic cyst with borderline foci

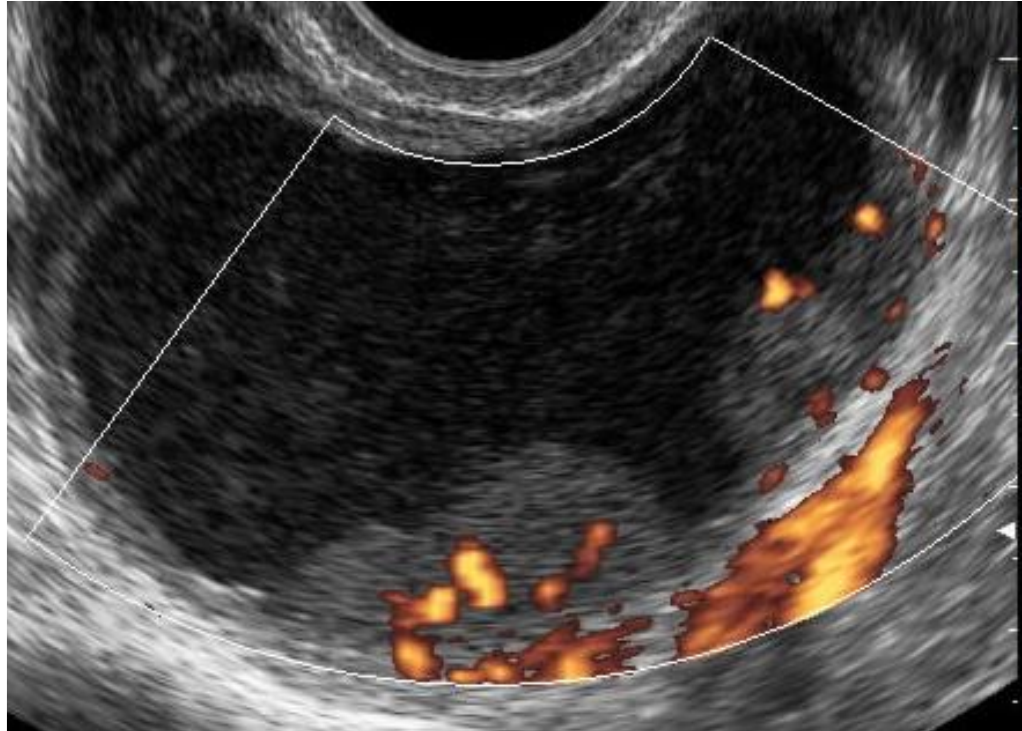


Endometriod borderline ovarian tumor in endometriotic cyst,  
with vascularized papillary projection



Endometrioid ovarian carcinoma in endometriotic cyst  
with vascularized papillary projection

# Decidualized endometriomas during pregnancy



During pregnancy endometriomas can change their appearance secondary to decidualization: they can present papillary projections vascularized at ColorDoppler with smooth surface. The features may be quite alarming, with solid vascular projections into the cyst cavity.