

CONTROVERSES ET ACTUALITÉS EN CHIRURGIE VASCULAIRE  
CONTROVERSIES & UPDATES  
IN VASCULAR SURGERY

# Symmetry or asymmetry of the venous valves anomalies: does it change the procedure and its order?

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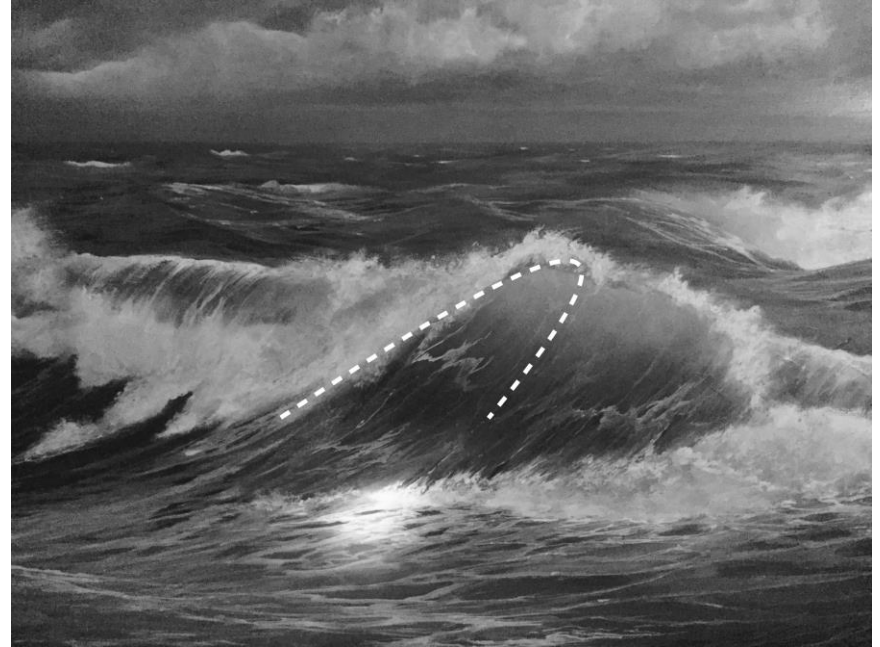
(UEMS)

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A correct fluid movement **is essential** for a perfect valve function



An intraoperative photograph showing a heart valve, likely the aortic valve, during a surgical procedure. The valve is centrally located, appearing as a dark, fibrous structure with a distinct opening. It is surrounded by bright red, vascularized tissue, including the myocardium and pericardium. Surgical instruments are visible on the left side of the frame, and the overall scene is illuminated with bright, clinical lighting. The text "But a correct fluid movement is associated with a normal valve morphology" is overlaid in white, bold font across the upper portion of the image.

**But a correct fluid movement  
is associated with a normal  
valve morphology**



**Valve dysfunction is due to:**

**• Congenital anomalies of**

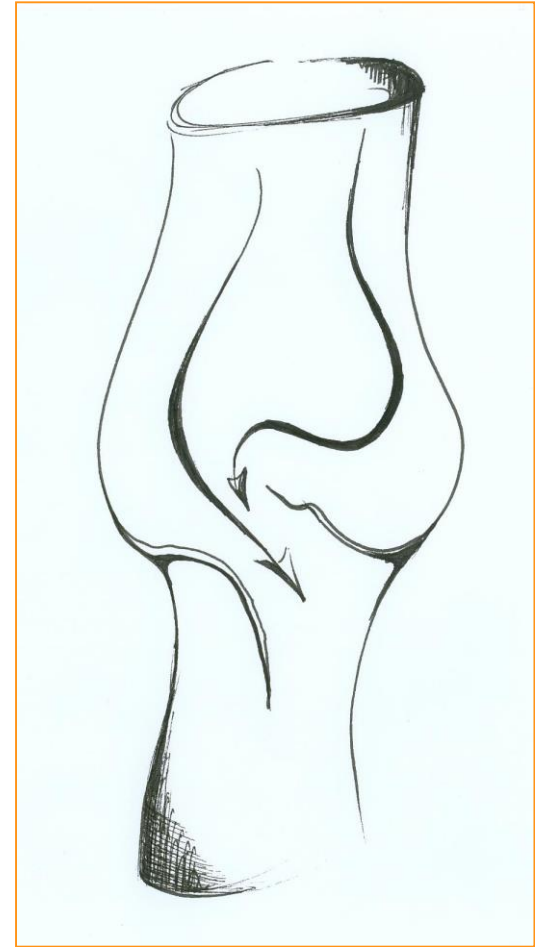
**• Increased volume**

**Cusps**

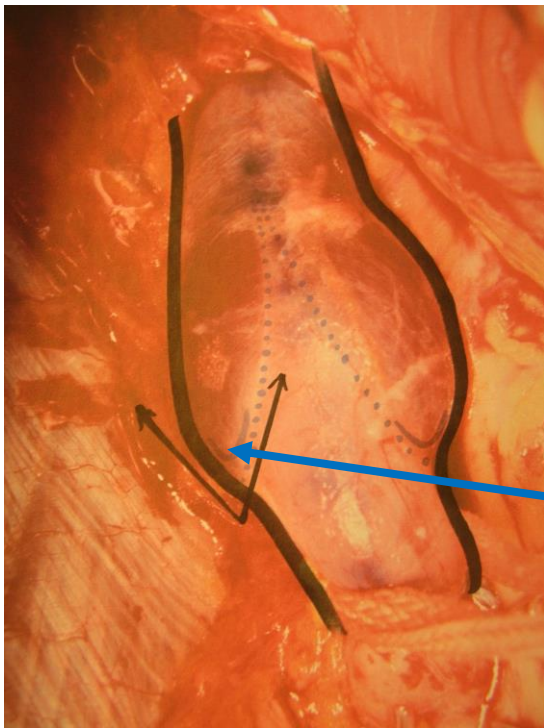
**Sinus**

**Correlated anatomic  
variation**

## Congenital anomalies of cusps

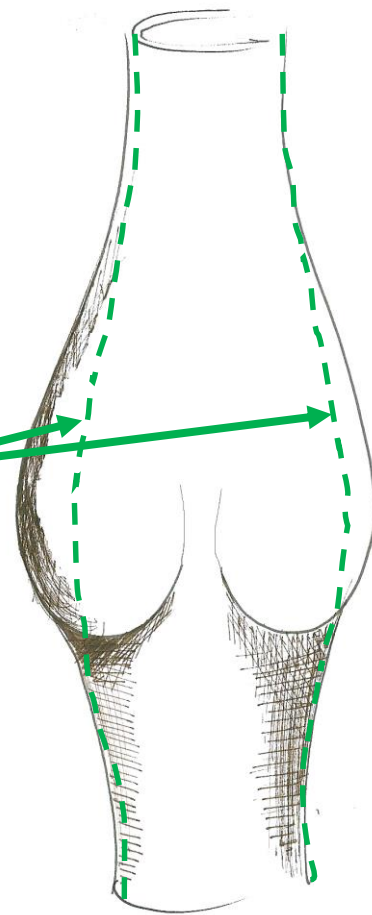


# Congenital anomalies of valve sinus



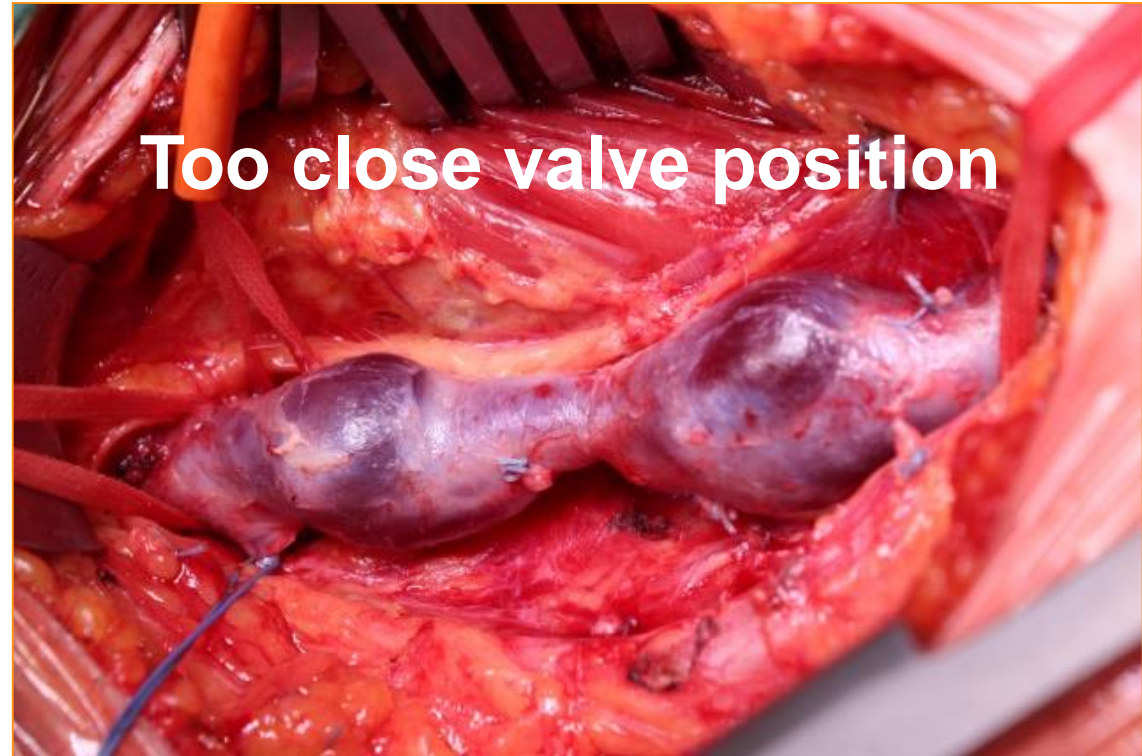
Sinus absence

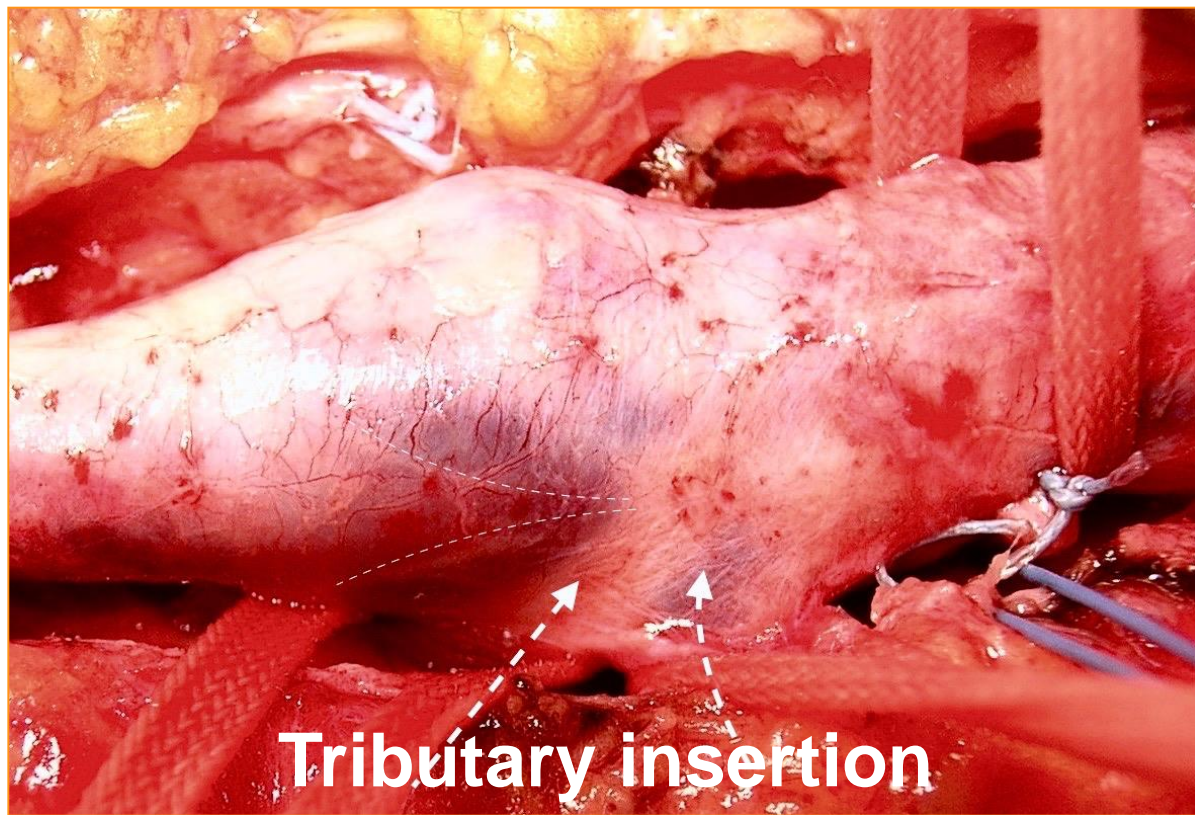
Wide angle





# Correlated anatomic variations





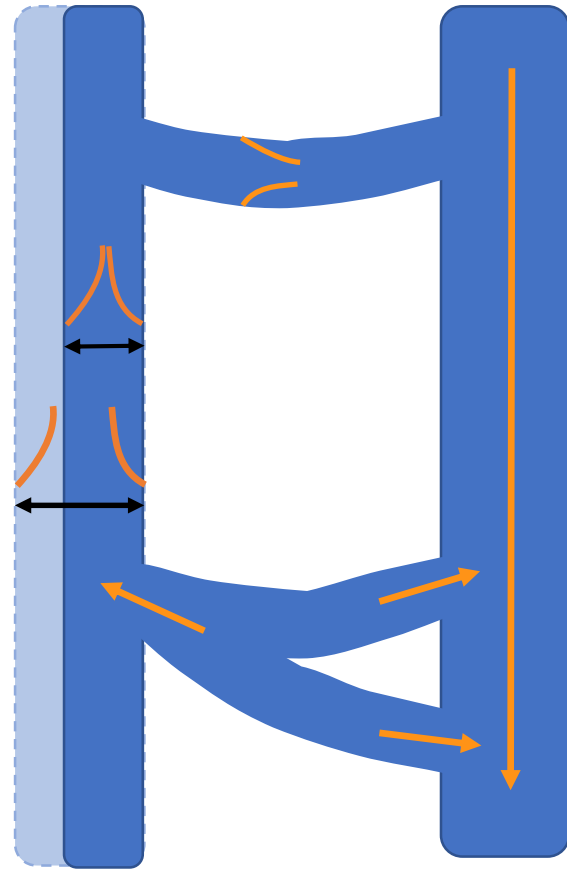


Increased  
volume

can be caused by

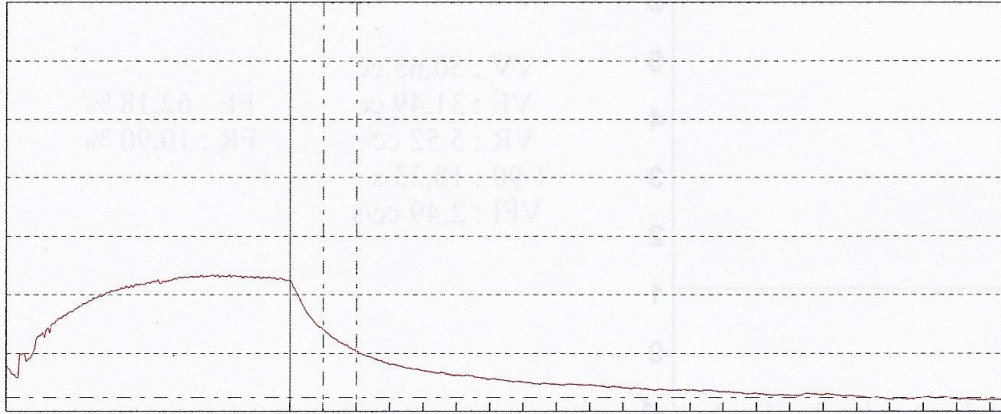
**OVERLOAD**

from superficial  
incompetence

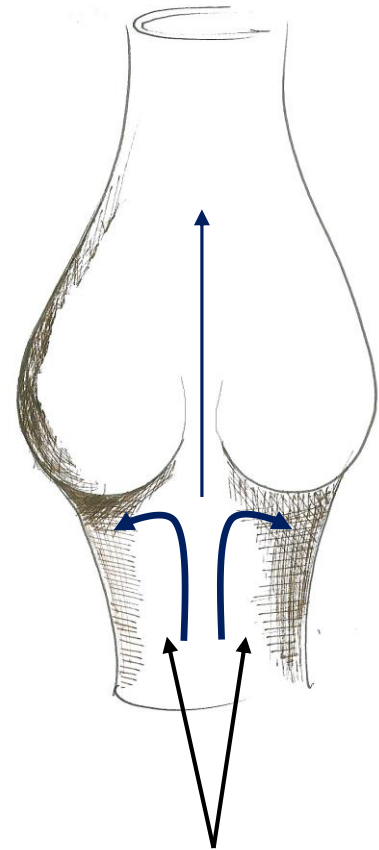


Deep venous  
system

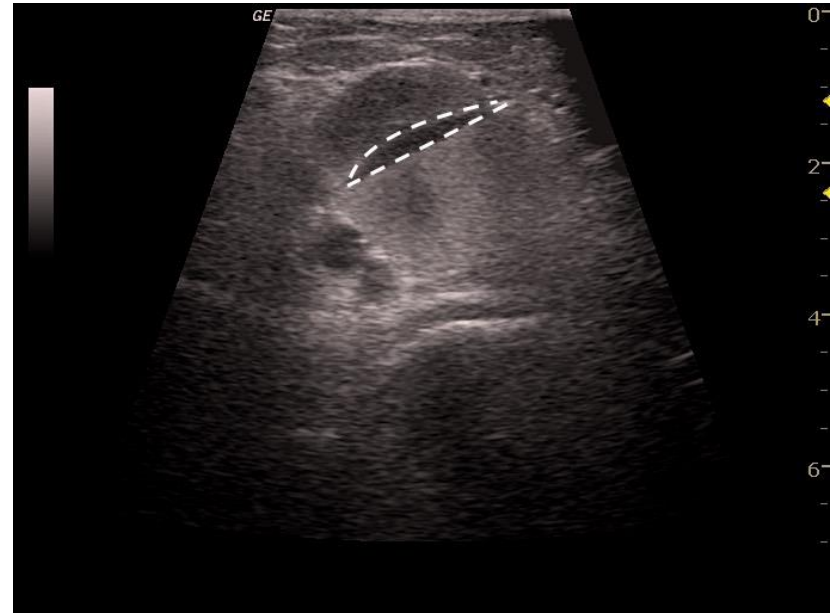
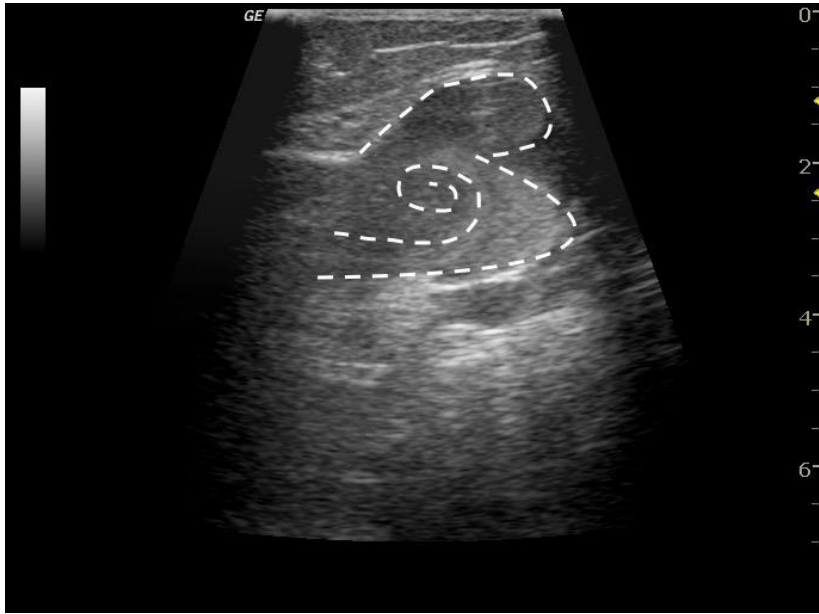
Superficial  
venous system



**Increased volume** 



**Increased resistances**



The increased volume prevents a correct opening of the valve, increasing the resistance



**Superficial** incompetence  
with large varicose vein can  
be correlated with **deep**  
**reflux**



**Which reflux occurs as first?**

Supposing the deep reflux  
secondary to overload  
determined by superficial  
incompetence

**What happens at deep level after  
treating the superficial system alone?**

Sales CM et al. Correction of lower extremity deep venous incompetence by ablation of superficial venous reflux. *Ann Vasc Surg* 1996;10(2):186-9.

Walsh JC et al. Femoral venous reflux abolished by greater saphenous vein stripping. *Ann Vasc Surg* 1994;8(6):566-70.

They obtained deep venous competence in > 90% of the  
cases  
( treating the superficial incompetence alone )



Makarova NP et al. Does surgical correction of the superficial femoral vein valve change the course of varicose disease? J Vasc Surg 2001;33:361-8.

Sharp MA et al. Popliteal venous reflux is not abolished by superficial venous ligation. Phlebology 2003;18:143-5.

They obtained deep venous  
competence in < 10% of the cases  
( treating the superficial incompetence alone )

Puggioni A et al. How often is deep venous reflux eliminated after saphenous vein ablation? J Vasc Surg 2003;38:517-21.

Ting ACW et al. Reduction in deep vein reflux after concomitant subfascial endoscopic perforating vein surgery and superficial vein ablation in advanced primary chronic venous insufficiency. J Vasc Surg 2006;43:546-50.

They obtained deep venous  
competence from 30% to 60%  
( treating the superficial incompetence alone )

In 40 to 70% of cases  
the deep venous reflux persists,  
so the reduction of overload is not effective



# The question is:

Eur J Vasc Endovasc Surg (2017) 53, 229–236

## After Superficial Ablation for Superficial Reflux Associated with Primary Deep Axial Reflux, Can Variable Outcomes be Caused by Deep Venous Valve Anomalies?

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### WHAT THIS PAPER ADDS

When superficial and associated primary deep reflux are treated by superficial ablation alone, the variable outcomes may be caused by deep valve anomalies. Good results have been obtained in series when the deep incompetent valves have symmetrical leaflets. Conversely, when the leaflets are asymmetrical, no improvement can be obtained. If leaflet conformation is identified from the outset in patients affected by chronic venous insufficiency, femoral valvuloplasty and superficial ablation may be recommended. However, current routine investigations at the pre-operative stage cannot detect such leaflet asymmetry.

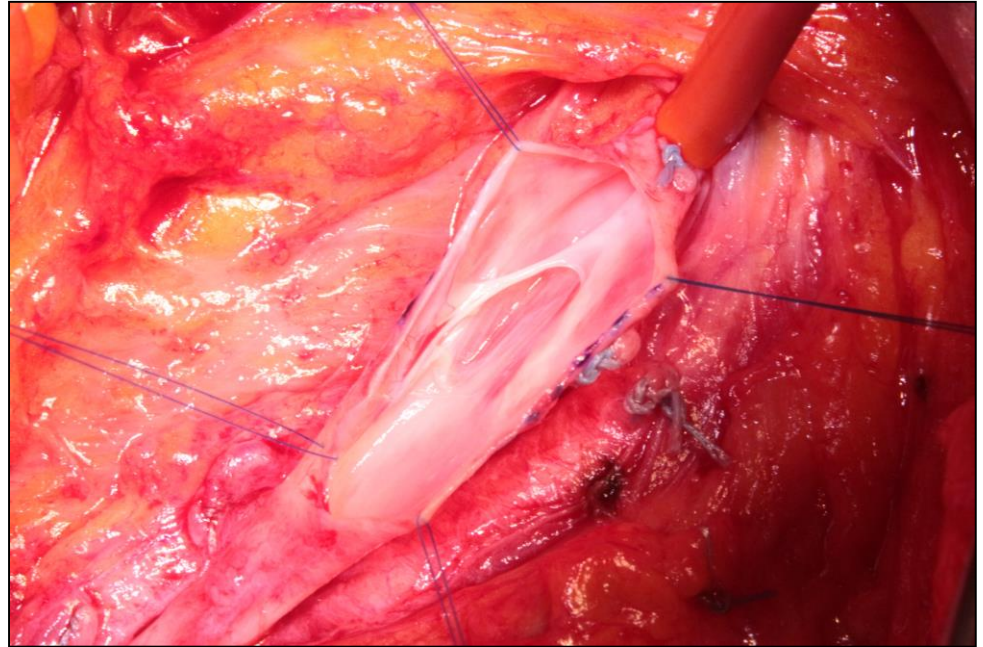
Maleti O, Lugli M, Perrin M. After superficial ablation for superficial reflux associated with primary deep axial reflux, can variable outcomes be caused by deep venous valve anomalies? Eur J Vasc Endovasc Surg 2017;53:229-36.

We studied 21 patients affected  
by superficial and deep venous incompetence  
and submitted to superficial ablation  
in whom the deep reflux was still persistent

Consequently, they underwent valvuloplasty

4 patients (15%)  
were pre-operatively erroneously  
classified Ep instead of Es

Irreversible PTS  
valve damage



In the remaining patients we found two different valve's morphology:

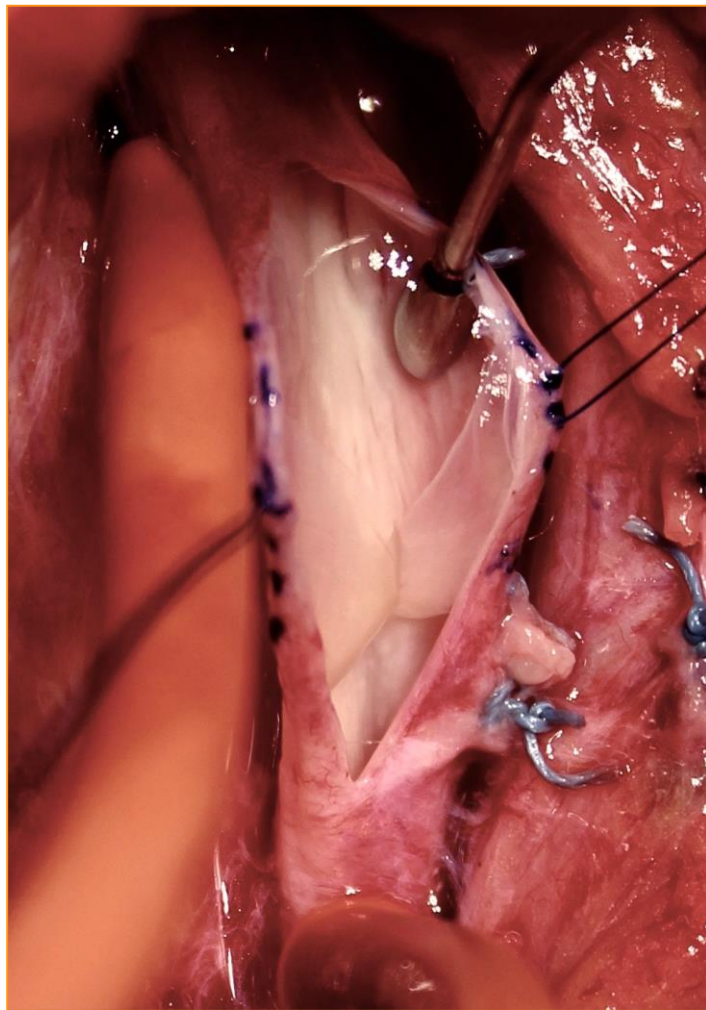
- symmetric cusps (10%)
- asymmetric cusps (90%)

What does **symmetric cusps** mean?



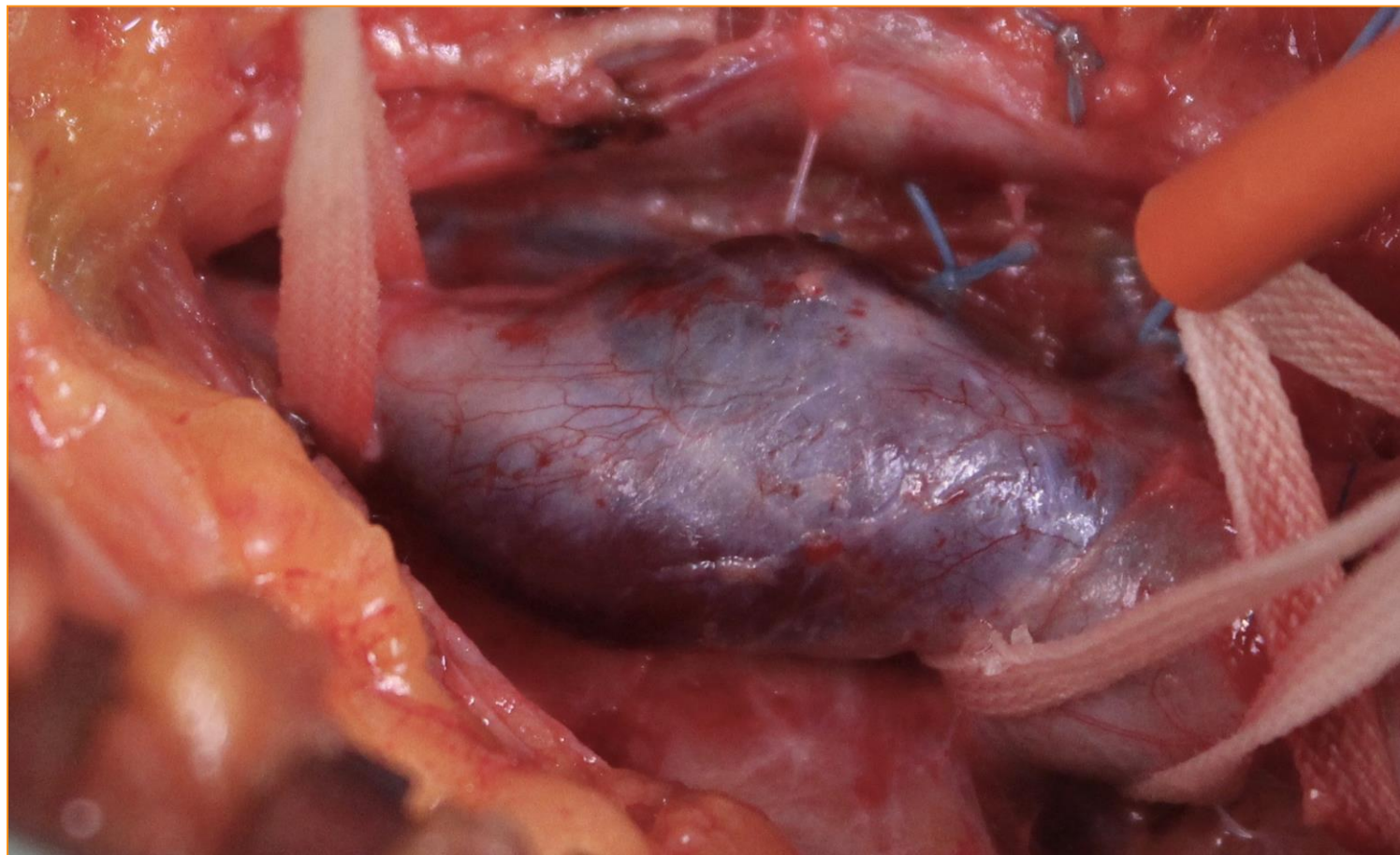


Symmetric cusps



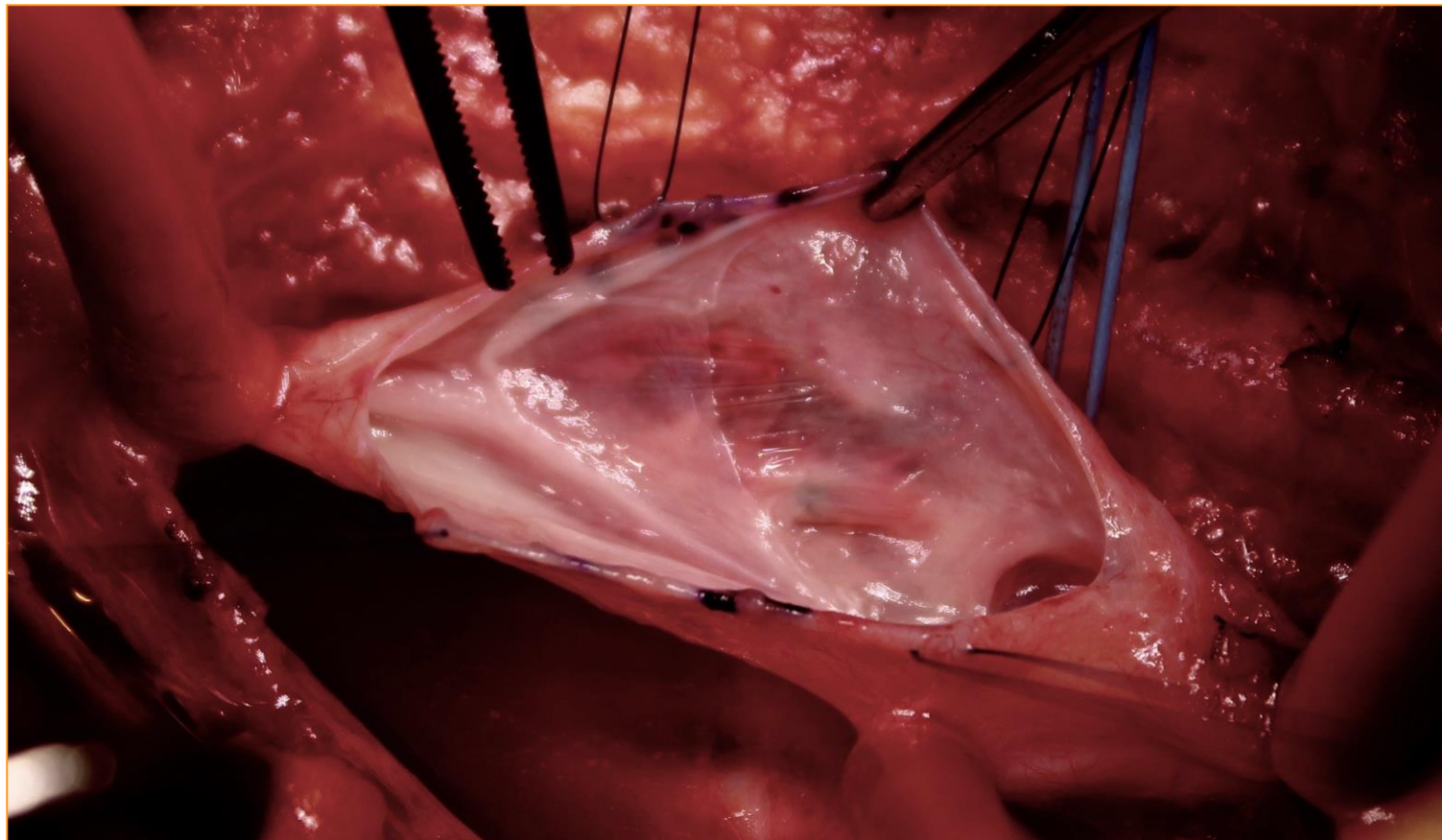


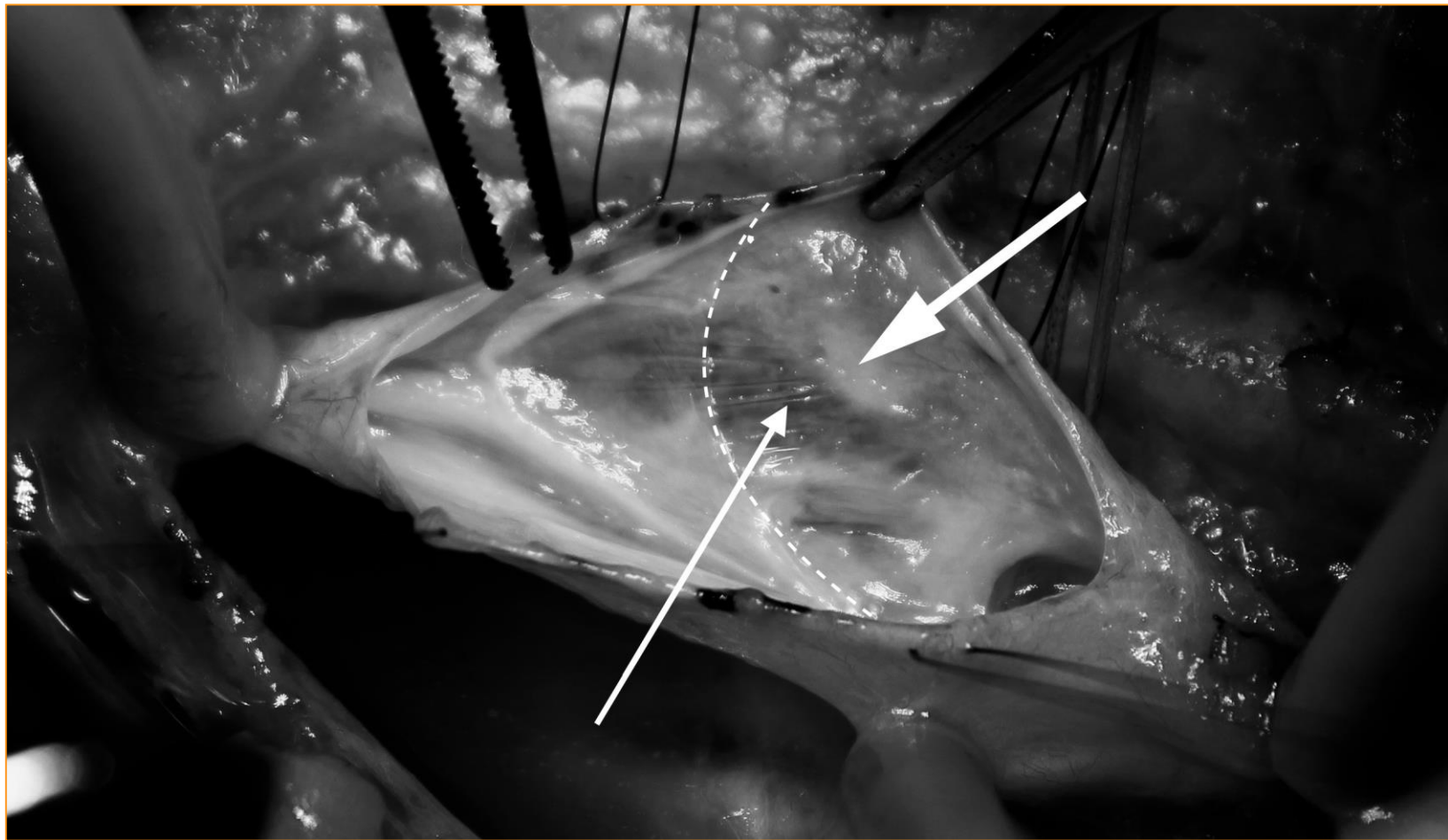
Why in some cases competency is not  
achieved by superficial ablation  
despite valve symmetry?



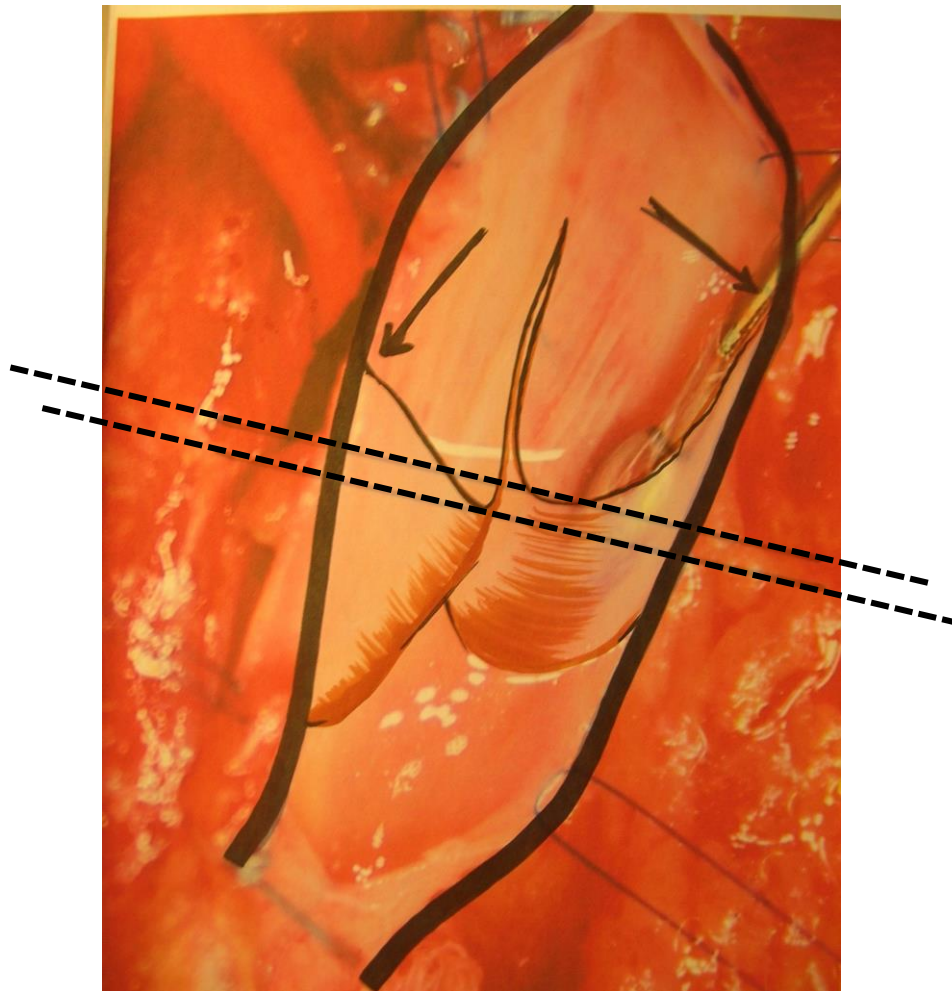




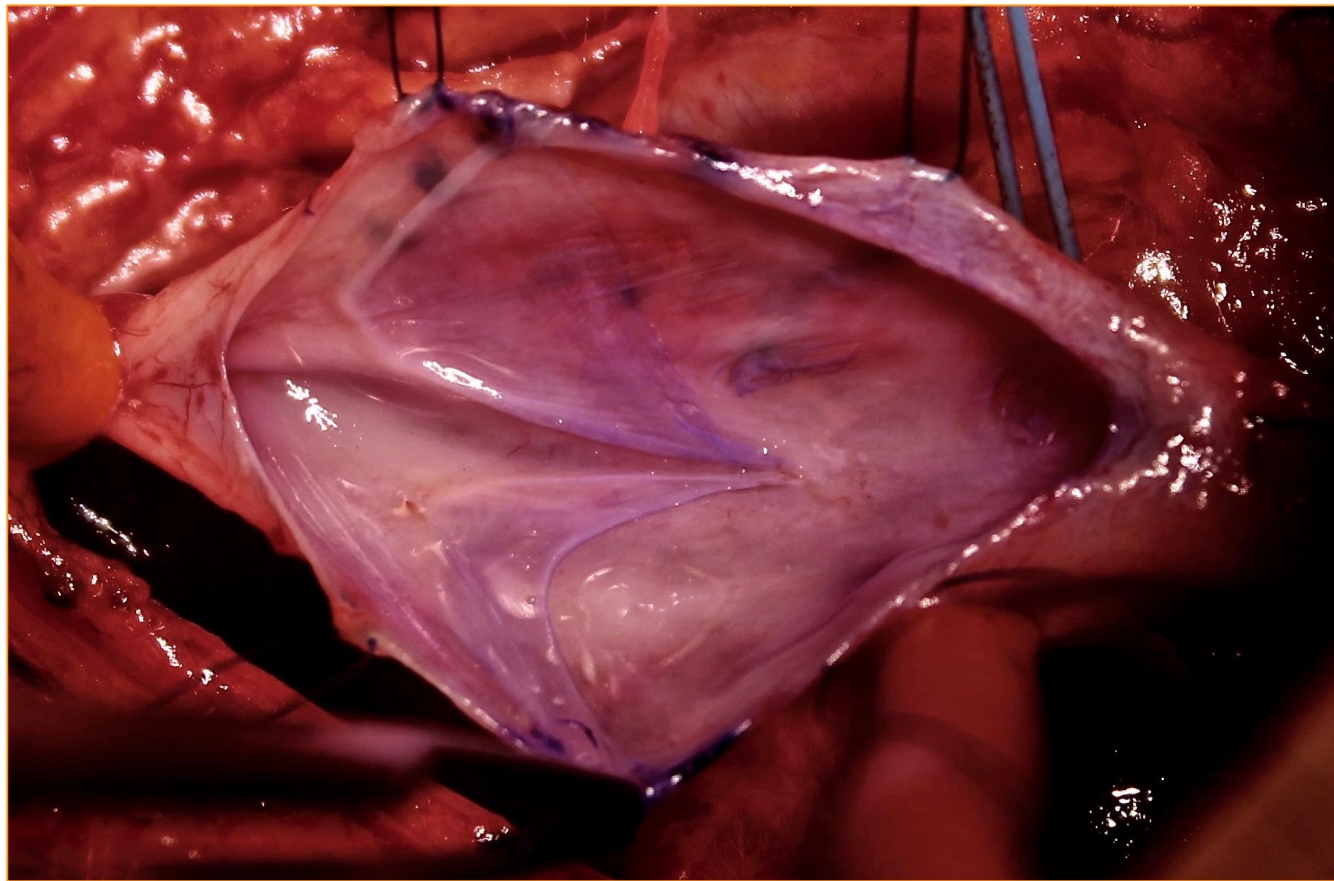


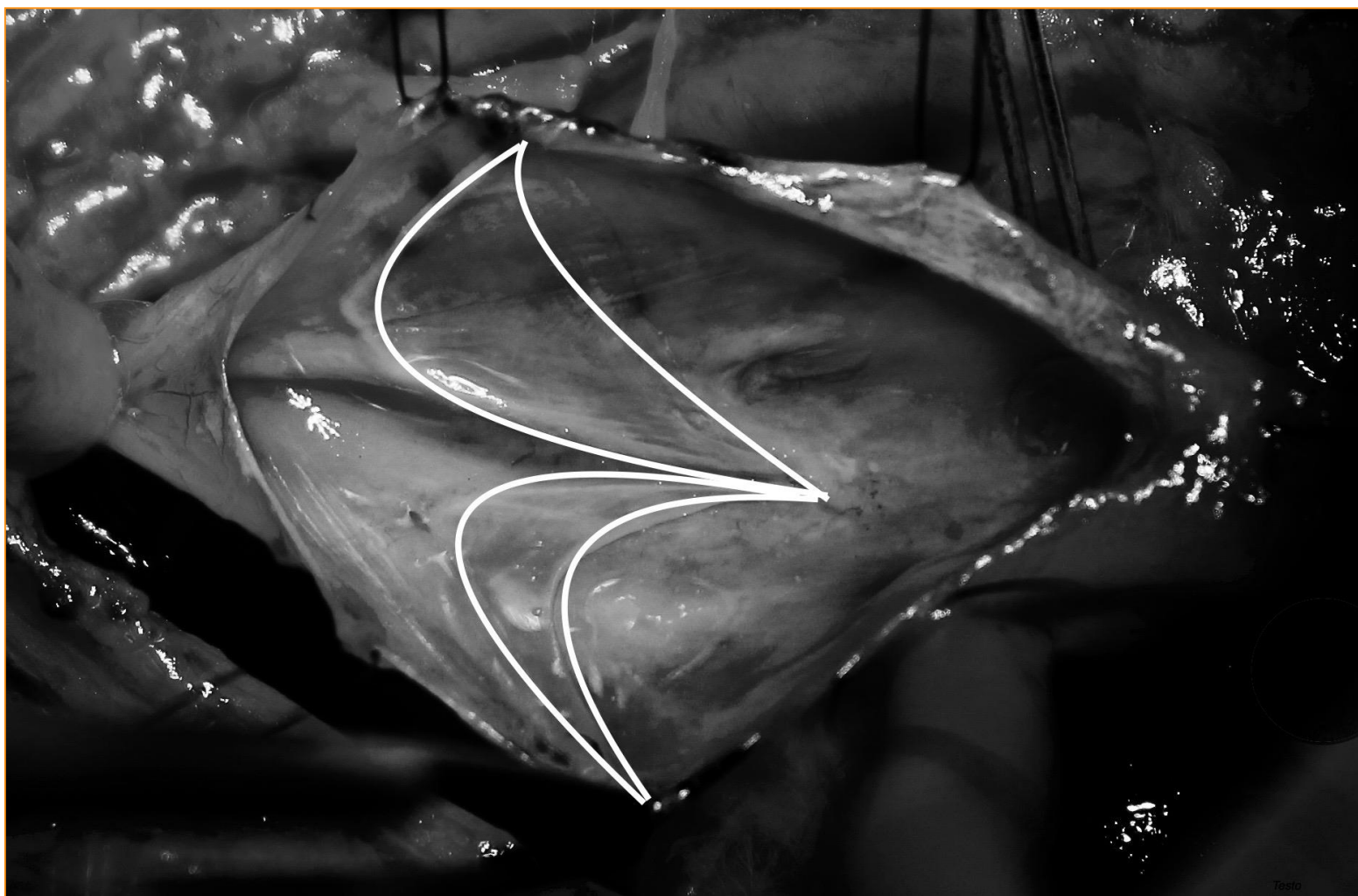


What does **asymmetric cusps** mean?

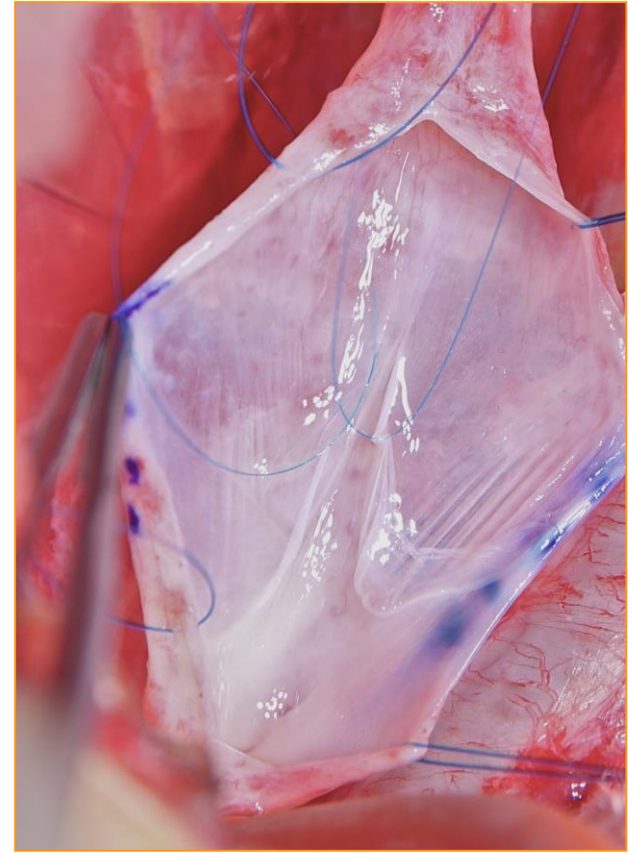








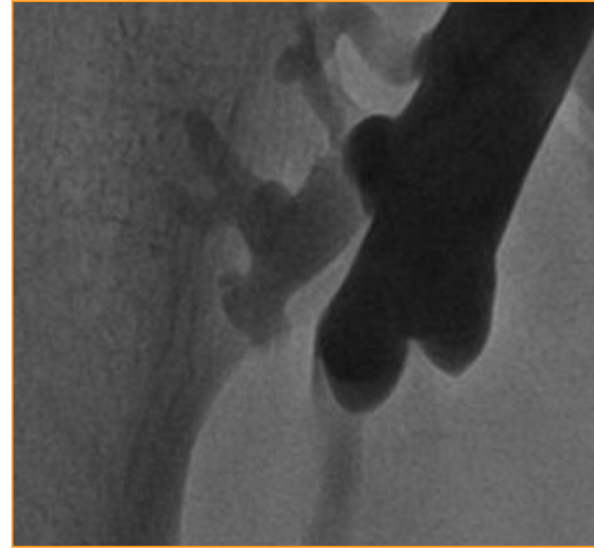
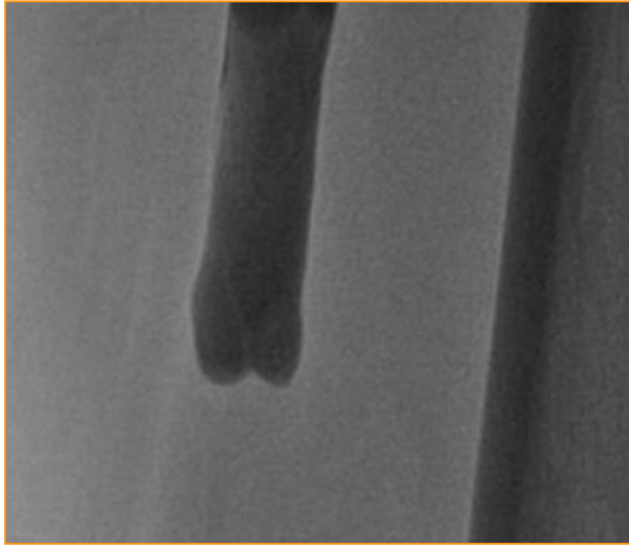
In the asymmetric valve the deep reflux is persisting after superficial ablation



In asymmetric valve the deep reflux occurs as first hemodynamic disorder.

These cases should be classified  
CEAP **Ec** instead of **Ep**

It's very difficult to establish pre-operatively with accuracy the morphology of the valve (about 70%)



In case of asymmetric documented valve,  
the deep system should be treated first?



The problem is that to establish exactly the morphology of proximal valves is difficult, much more for the distal ones  
**the superficial ablation should be the first step**



Conversely, in case of multiple recurrences, valvuloplasty should be first performed before iterative treatment of superficial incompetence





Thank you