ULTRASONOGRAPHIC IDENTIFICATION OF THE POSTERIOR INTEROSSEOUS ARTERY. TECHNICAL REALIZATION, RESULTS ON THE HEALTHY SUBJECT AND CONSEQUENCES ON THE CHOICE OF RAISE OF A POSTERIOR RETROGRADE PEDICLE POSTERIOR FLAP

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ANATOMICAL VARIATIONS OF PIA:

Absence of anastomosis with AIA
Decrease size at middle part (Angriani PRS 1993)
Absence of PIA at the middle part (Penteado Surg Radiol Anat 1986)
THE STUDY

- Surgeon
- TOSHIBA APLIO 300 12 Mhz
- 10 wrists
- Color doppler
- Elevator technique
- Under EDM up to DRUJ
DIAMETER MIDDLE THIRD/ INF THIRD
FLOW EVOLUTION MIDDLE THIRD/ INF THIRD
PIA/AIA ANASTOMOSIS
RESULTS

- Diameter at middle third = 55% of the diameter at the lower third
- Anastomosis with AIA in 80% of cases
- One case doubtful anastomosis + decrease flow
- One case doubtful anastomosis but full flow

<table>
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<tr>
<th>Age</th>
<th>sexe</th>
<th>PIA inf diameter (in mm)</th>
<th>PIA Middle diameter (in mm)</th>
<th>Anastomosis AIA/PIA</th>
<th>Flow speed (PIA Inf/sup)</th>
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DISCUSSION

- Ultrasound is easy and seems reliable

- Lower third reinforcement of flow may be considered as an indirect sign of anastomosis with AIA when not seen.
DISCUSSION: DIFFERENT WAY TO TRACK

RADIOLOGY

Arteriogram: Voigt (Eur J Plast Surg 2013)
Tomographic Angiography: Rozen (Ann plast Surg 2010)

But no emergency (burn) and need a radiologist
DISCUSSION: DIFFERENT WAY TO TRACK

Ultrasound: Vinita (JPRS 2007): But perforant arteries
DISCUSSION: DIFFERENT WAY TO TRACK

SURGICAL
Penteado, Zancolli, Angriani, Goubier, Lai-jin

NO:
Balakrishnan, Acharya
DIFFERENT WAYS TO RAISE

- Fascial pedicle (Masquelet Ann Chir Main 1987, Zancolli J Hand Surg 1988)
- With skin bridge (Acharya JHS 2012, Balakrishnan PRS2003)
DECISION TREE

- **Anast+ PIA +**
  - Fascial pedicle

- **Anast- PIA flow inc +**
  - Skin bridge

- **Anast- PIA flow inc -**

- **Anast- PIA -**
  - Skin bridge or other flap
CONCLUSION

• Easy tracking and seemingly reliable
• Adapt surgical technique to ultrasound data
• To be confirmed in clinical practice