

# **Intervención Coronaria Percutánea**

## **Acceso Femoral vs Acceso Radial**

**(Transradial vs Transfemoral Percutaneous  
Coronary Intervention)**

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# Acceso Femoral

- Puncture in common femoral artery.
- 2 cm below the inguinal ligament.
- Inguinal ligament runs from the anterior superior iliac spine to the pubic tubercle.
- The position of the inguinal skin crease can be misleading in obese patients.

# Bleeding: Risk Factors

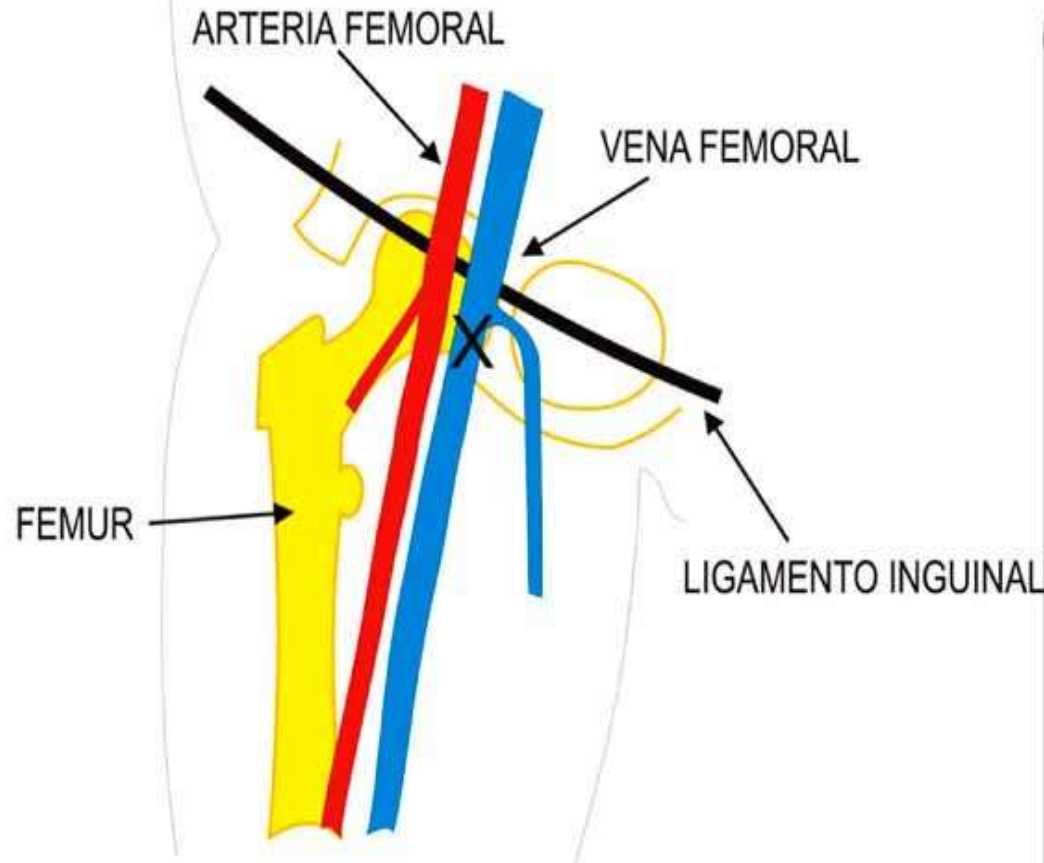
## Modifiable

- **Site of Puncture**
- Size of sheath
- Sheath removal
- Medications

## Non modifiable

- Age
- Gender
- BMI
- Associated disorders

## Site of Puncture:



**Avoid:**

- 1.- below bifurcation.
- 2.- posterior wall
- 3.- inferior epigastric artery

The use of the femoral head as a landmark for the common femoral artery was of limited validity in 30% of our patients

Alonso M et al Rev Esp Cardiol 2003;56(6):569-77

# Cateterismo Cardíaco por vía Radial

## Ventajas:

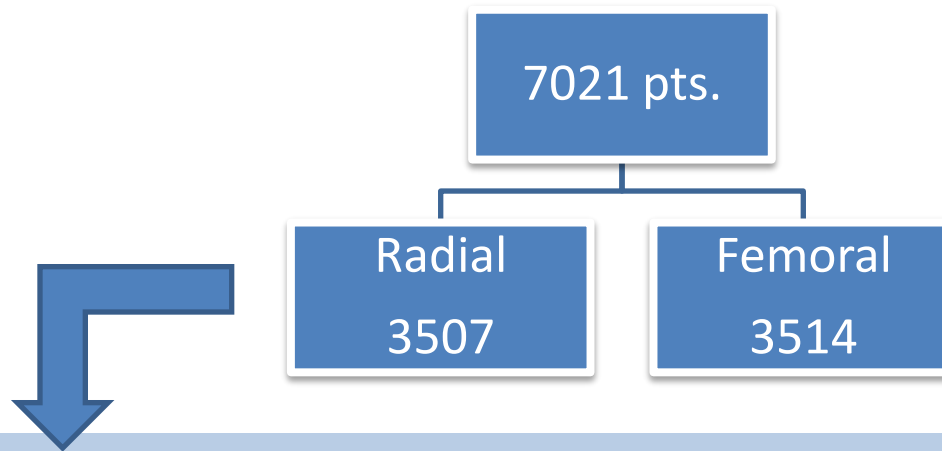
- Trayecto superficial en su tercio distal.
- Plano óseo para la compresión.
- No presenta en las inmediaciones estructuras nerviosas o venosas de consideración.
- Deambulación temprana; alta precoz.
- Menos complicaciones hemorrágicas.
- Menor costo económico.

# Cateterismo Cardíaco por vía Radial

## Desventajas:

- Menor Diámetro Luminal Medio (aprox 3mm.).
- Espasmo
- Variabilidad Anatómica
- Oclusión
- Mayor probabilidad de irradiación del operador

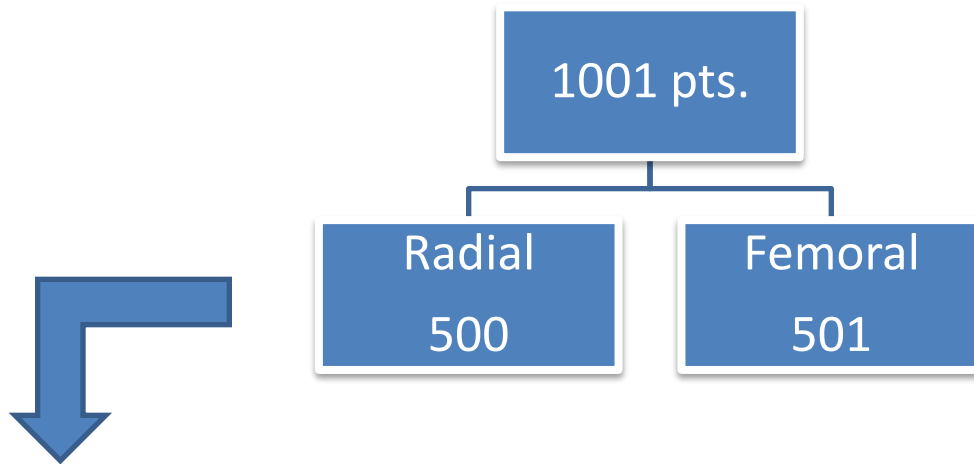
# Radial versus femoral access for coronary angiography and intervention in patients with acute coronary syndromes (RIVAL): a randomised, parallel group, multicentre trial



- Randomized
- large haematoma: 42 vs 106 (HR 0.40, 95% CI 0.28—0.57  
p<0.0001)
- Pseudoaneurysm needing closure: 7 vs 23 HR 0.30, 95%  
CI 0.13—0.71 p=0.006



# Radial versus femoral randomized investigation in ST-segment elevation acute coronary syndrome: the RIFLE-STEACS (Radial Versus Femoral Randomized Investigation in ST-Elevation Acute Coronary Syndrome) study.



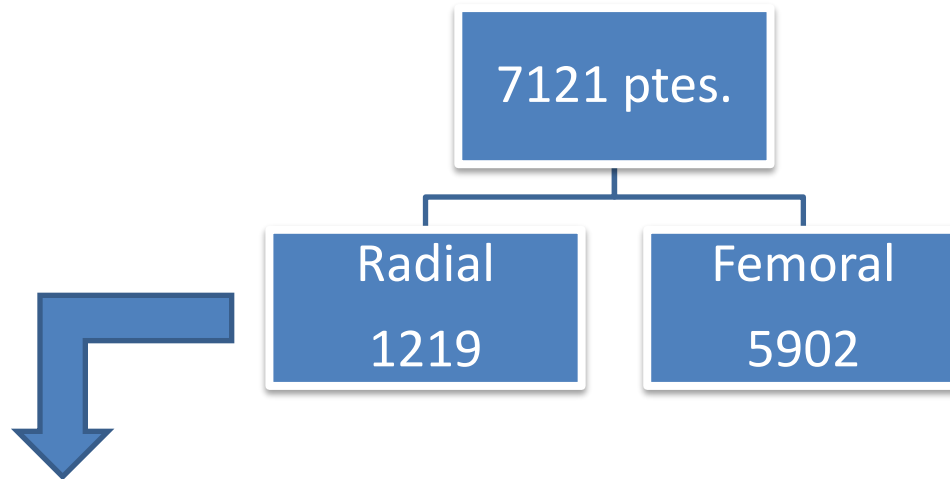
Lower cardiac mortality: 5.2% vs 9.2%  $p=0.02$

Lower bleeding: 7.8% vs. 12.2%,  $p = 0.026$

Shorter hospital stay:  $p = 0.03$

[Romagnoli E et al J Am Coll Cardiol. 2012 Dec 18;60\(24\):2481-9.](#)

# Costs of Transradial Percutaneous Coronary Intervention



Shorter Length of Stay (2.5 vs 3.0 days  $p < 0.001$ )  
Lower Bleeding Events (1.1 vs 2.4%  $p = 0.002$ )  
Total Cost Savings (CI u\$s 296 to 1364  $p < 0.001$ )

# Complications of Radial Approach

- Failure of Radial Artery Cannulation: more common than Femoral artery cannulation (7.6% vs 2.0%  $p < 0.01$ )  
*J Am Coll Cardiol. 2004 Jul 21; 44(2):349-56.*
- *Radial Artery Spasm: 2 to 22%*  
*Rev Esp Cardiol. 2005 May; 58(5):504-11.*
- Segmental neointimal proliferation, thickening of the intima-media complex and negative remodeling  
*J Am Coll Cardiol. 2003 Apr 2; 41(7):1109-14.*  
*Am J Cardiol. 1999 Jan 15; 83(2):180-6.*

# Complications of Radial Approach

- Endothelial dysfunction and impaired diastolic response to vasodilators and to hyperemia

*Am J Cardiol. 2007 Feb 15; 99(4):457-9.*

- Compartment Syndrome
- Pseudoaneurysm
- Radial artery Avulsion

# Complications of Radial Approach

- Radial Artery Occlusion:
  - 5 to 12%
  - 50% lower if examination after 30 days
  - Predisposing factors:
    - Hypotension
    - Haematoma
    - Prolonged cannulation
    - Small diameter of radial artery
    - Lack of blood flow during compression

*JACC Cardiovasc Interv. 2010 Oct; 3(10):1022-31*

*Circ Cardiovasc Interv. 2012 Feb 1; 5(1):127-33.*

*EuroIntervention. 2013 Mar; 8(11):1242-51.*

*Catheter Cardiovasc Interv. 2007 Aug 1; 70(2):185-9.*

# Prevention of Radial Artery Occlusion

- Removal of the sheath from the radial artery immediately after the procedure, as compared to the removal after 3 h, is associated with significantly lower risk of RAO (0% vs 5%)  
*Catheter Cardiovasc Interv. 1999 Jan; 46(1):37-41; discussion 42*
- Shortening the time for bandage compression from 6 to 2 hs  
12% to 5.5% ( $p = 0.025$ )  
*Catheter Cardiovasc Interv. 2012 Jan 1; 79(1):78-81*
- Heparin administration (IV or IA)  
*Am J Cardiol. 2009 Oct 15; 104(8):1083-5.*





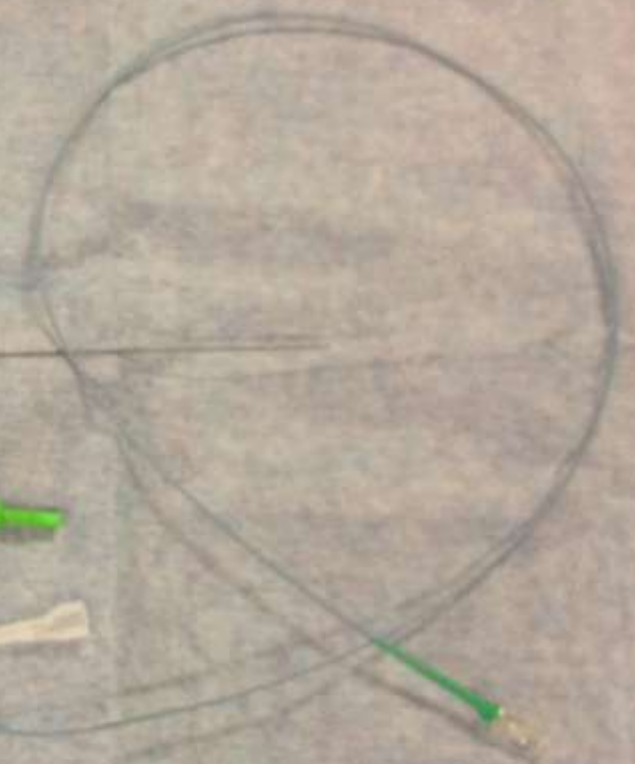










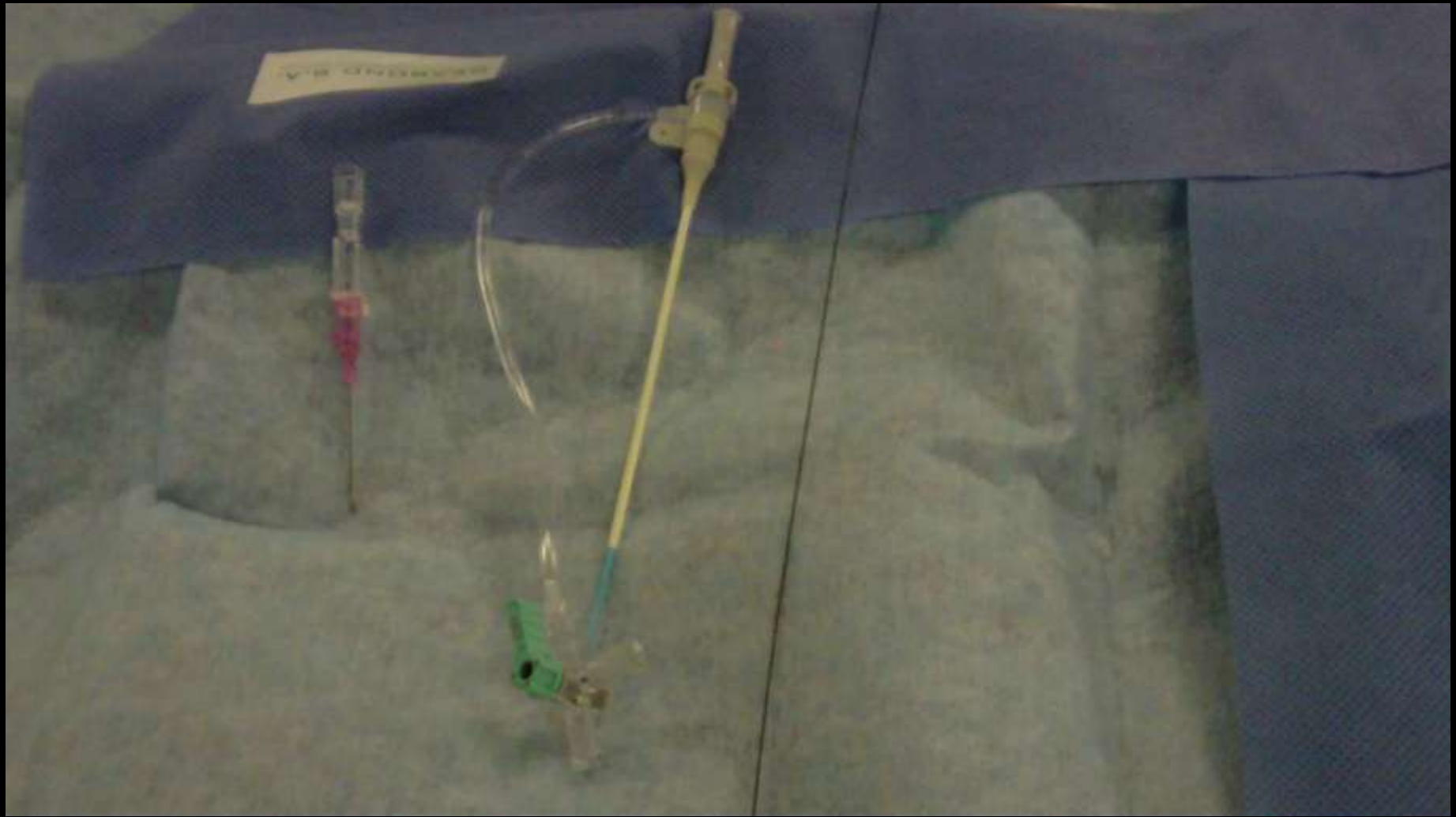
















**Thank You**