

超声引导下桡动脉穿刺 置管影响因素

提倡超声引导

- 提高效率：

 - 一次成功率提高

 - 总的穿刺次数降低

 - 穿刺时间大幅度降低

 - 失败率

- 降低并发症

 - 穿刺损伤(邻近肌腱、神经)

 - 远端缺血(痉挛、血栓、夹层)

 - 出血及其压迫(机化、粘连)

动脉特点

- 椭圆形
- lateral-lateral diameter: 2.70 ± 0.40 mm
- up-forward diameter: 1.90 ± 0.26 mm
- Qh Zhou,

动脉特点

- **The diameter of the radial artery was mean value of 2.2 ± 0.4 mm**
- **correlation with body surface area(BSA) (Pearson correlation 0.292,P\0.001)**
- Ultrasound evaluation of the radial artery for arterial catheterization in healthy anesthetized patients
- Dongchul Lee.Ji Young Kim.et
- JClin Monit Comput DOI10.1007/s10877-015-9704-9. Springer Science+Business Media New York 2015

动脉特点

- 年龄：年龄越小越细，三岁内，动脉平均直径**1.0mm(24G 穿刺针是0.7mm黄色)**
老年人动脉壁增厚，弹性差(尤其有动脉粥样硬化)
- 性别：男性直径大于女性，长期从事体力活动的更粗大
- 文献：硬化的动脉更容易引起血管痉挛
- Saito S,et Influence of the ratio between radial artery inner diameter and sheath outer diameter on radial artery flow after transradial coronary intervention.Catheter Cardiovasc Interv 1999;46:173-8.

血压

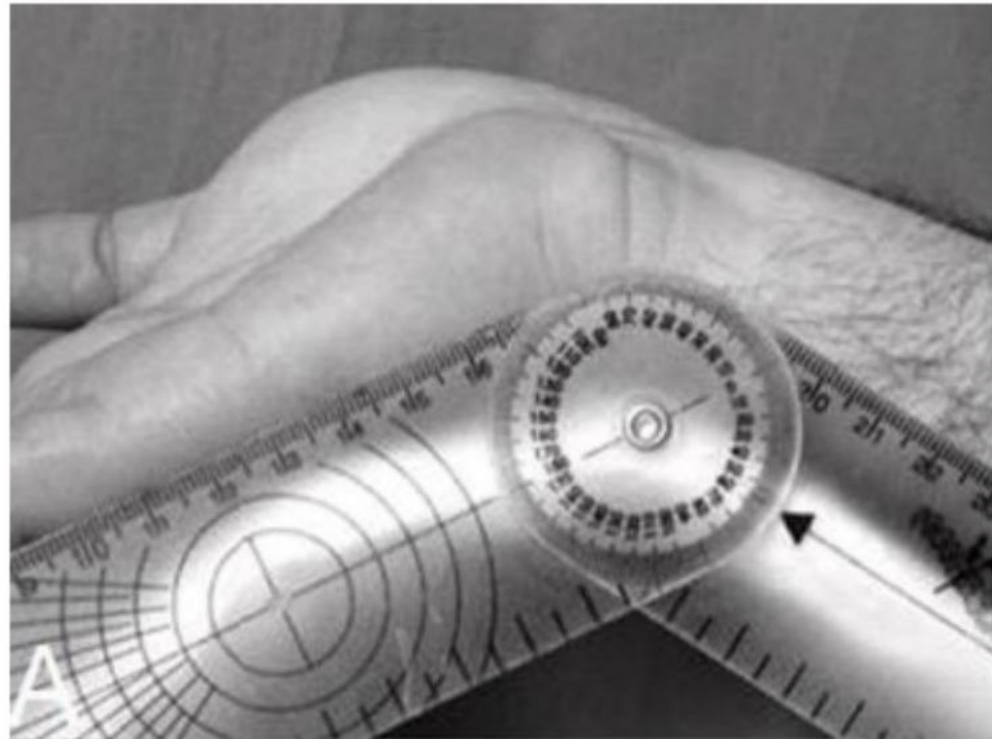
- 正常血压情况下，动脉充盈、饱满容易触及或显影
- 血压低于**80mmHg**,动脉会变扁平，触摸法相对困难，远端加压起到一个局部相对充盈的桡动脉
- 升压药？
 - 休克状态
 - 相对血管扩张

最佳手腕位置

最佳的手腕位置：
45°。

Forty-five degree wrist angulation is optimal for ultrasound guided long axis radial artery cannulation in patients over 60 years old:a randomized study.Ahmet Kucuk.et.

J Clin Monit Comput (2014) 28:567-572



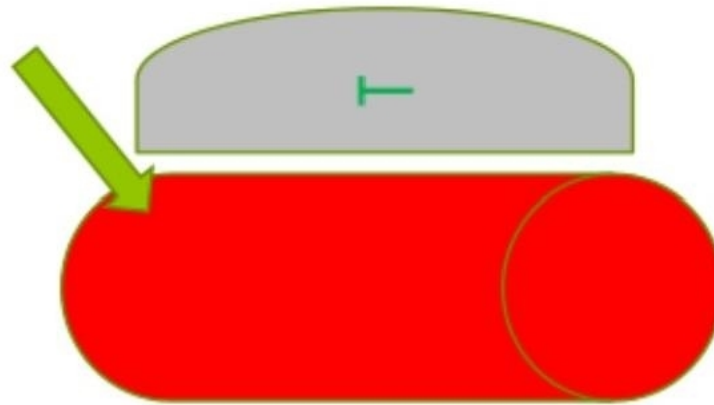
桡动脉垂直直径

	First attempt Successful(n=75)	First attempt failed(n=25)	p
○ Height (mm)	3.02±0.53	2.49±3.48	<0.001
○ Skin distance (mm)	2.63±0.64	2.58±0.59	0.71

- Ahmet Kucuk.et.Forty-five degree wrist angulation is optimal for ultrasound guided long axis radial artery cannulation in patients over 60 years old:a randomized study.J Clin Monit Comput (2014)28:567-572

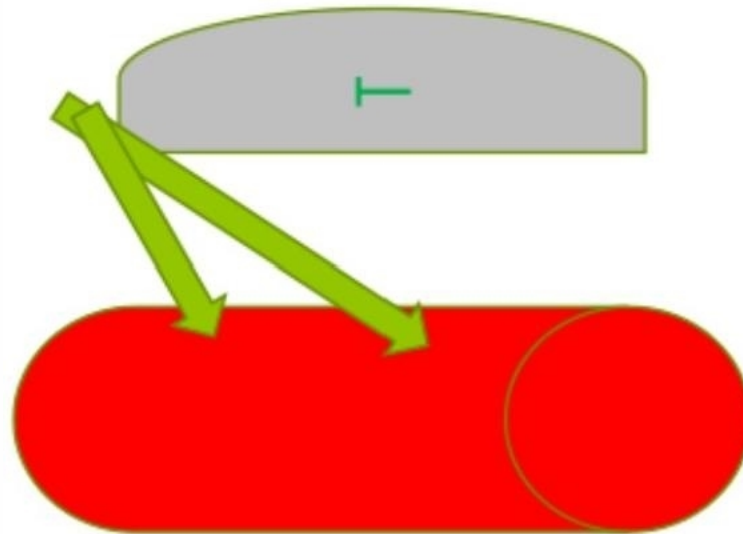
皮肤至动脉浅壁的深度

- 太浅：无法起到引导的作用



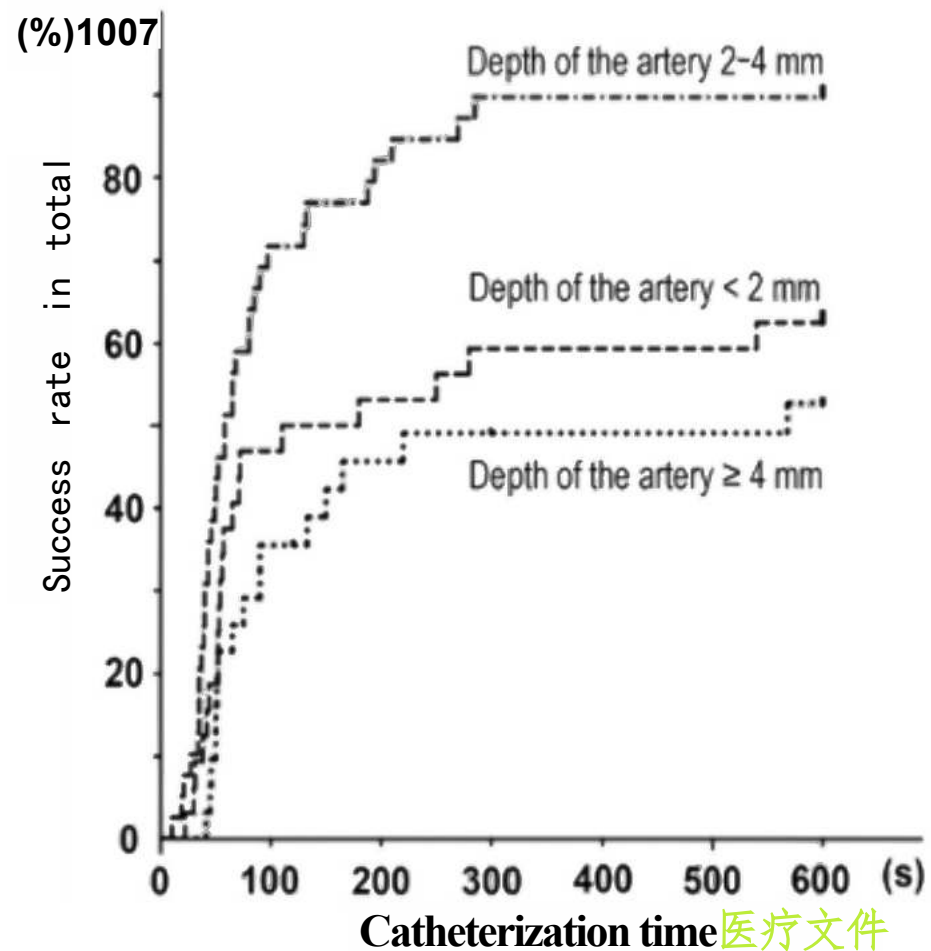
皮肤至动脉浅壁的深度

- 太深：穿刺针血管外路径太长，缩短穿刺针管外距离会增加针和血管的角度



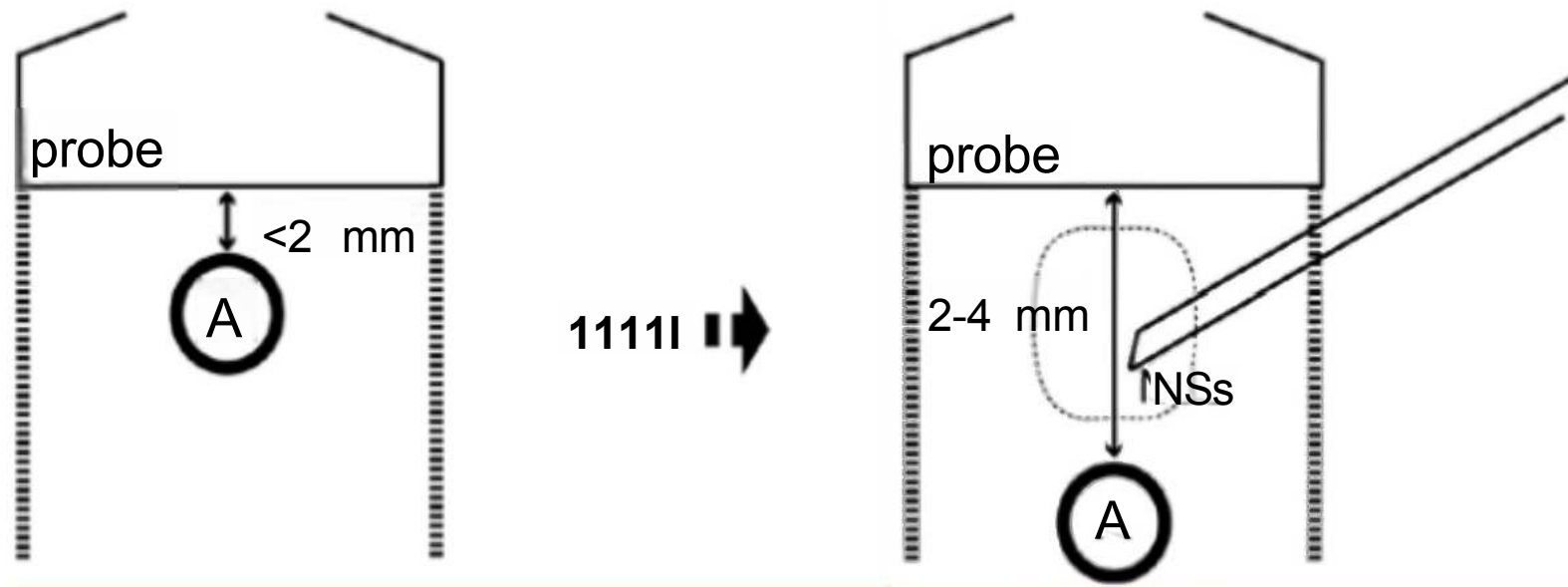
皮肤与动脉浅层壁

- A Novel Method for Ultrasound-Guided Radial Arterial Catheterization in Pediatric Patients
- Yoshinobu Nakayama, MD, et. Society for Pediatric Anesthesia. May 2014;118, Number 5



Catheterization time 医疗文件

穿刺最佳深度



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