

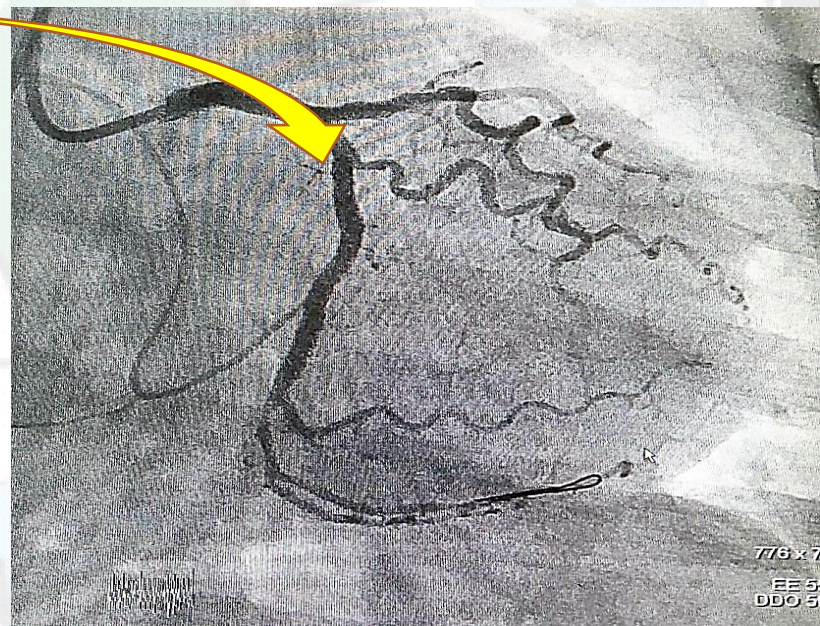
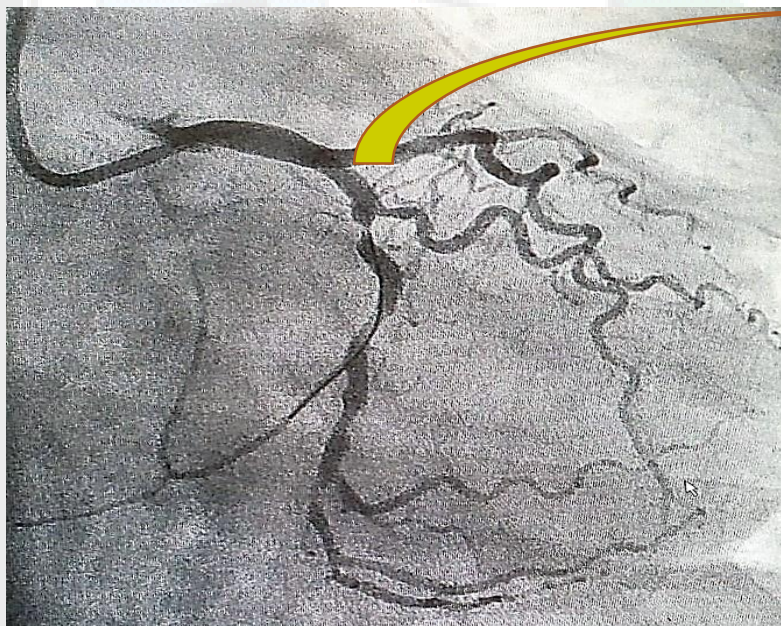


Cardiovascular Research Center,
Tabriz University of Medical Sciences,
Tabriz, Iran

PCI & Nursing Care

M.Moghagamnia

Faculty members of GUMS



Moghadamnia

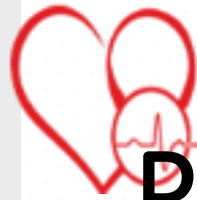


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Tabriz, Iran

Reperfusion Strategy

Thrombolytic
Therapy

Catheter- base
Intervention



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Tabriz, Iran

PCI

1. Balloon angioplasty

2. Atherectomy

3. Stent implantation

Atherectomy

Cardiovascular Research Center,
Cable University of Medical Sciences

MSN.com - Hotmail, Outlook - Alert! - ESET NOD32 Anti - Atherectomy - Wikipedia - mohammad Taghi

https://en.wikipedia.org/wiki/Atherectomy

The Free Encyclopedia

From Wikipedia, the free encyclopedia

Atherectomy is a minimally invasive endovascular surgery technique for removing atherosclerosis from blood vessels within the body. It is an alternative to angioplasty for the treatment of peripheral artery disease, with no evidence of superiority to angioplasty.^[1] It has also been used to treat coronary artery disease, albeit ineffectively.^[2]

Contents [hide]

- 1 Uses
- 2 Technique
- 3 See also
- 4 References

Uses [edit]

Atherectomy is used to treat narrowing in arteries caused by peripheral artery disease.

Technique [edit]

Unlike angioplasty and stents, which push plaque into the vessel wall, atherectomy cuts plaque from the wall of the artery. While atherectomy is usually employed to treat arteries it can be used in veins and vascular bypass grafts as well.

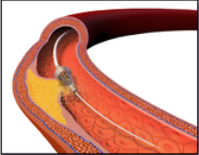
Atherectomy falls under the general category of percutaneous revascularization, which implies re-canalizing blocked vasculature via a needle puncture in the skin. The most common access point is near the groin through the common femoral artery (CFA). Other common places are the brachial artery, radial artery, popliteal artery, dorsalis pedis, and others.

There are four types of atherectomy devices: orbital, rotational, laser, and directional.

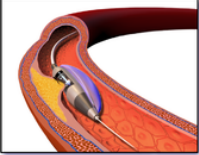
The decision to use which type of device is made by the interventionalist, based on a number of factors. They include the type of lesion being treated, the physician's experience with each device, and interpretation of the devices' risks and effectiveness, based on a review of the medical literature.

Atherectomy
Intervention

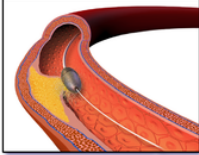
Transluminal Catheter



Directional



Rotational



Types of Atherectomy

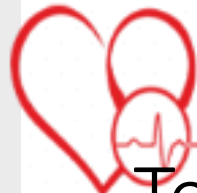
Illustration of three types of atherectomy devices being used to remove plaque in a blood vessel

ICD-9-CM	39.50, 00.61, -00.62
MeSH	D017073

[edit on Wikidata]

Ask me anything

Atherectom... New Tab - ... MSN.com - ... Skype™ - m... Post PCI nu... 08:23 ۱۳۹۶/۰۷/۱۹



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Term Definitions

- **Primary PCI:**PPCI is referred as the initial method of treatment for acute STEMI.
- **Elective PCI:**EPCI is used to treat patient with symptomatic coronary artery disease to address blockage in both native vessels and bypass grafts.

Primary PCI

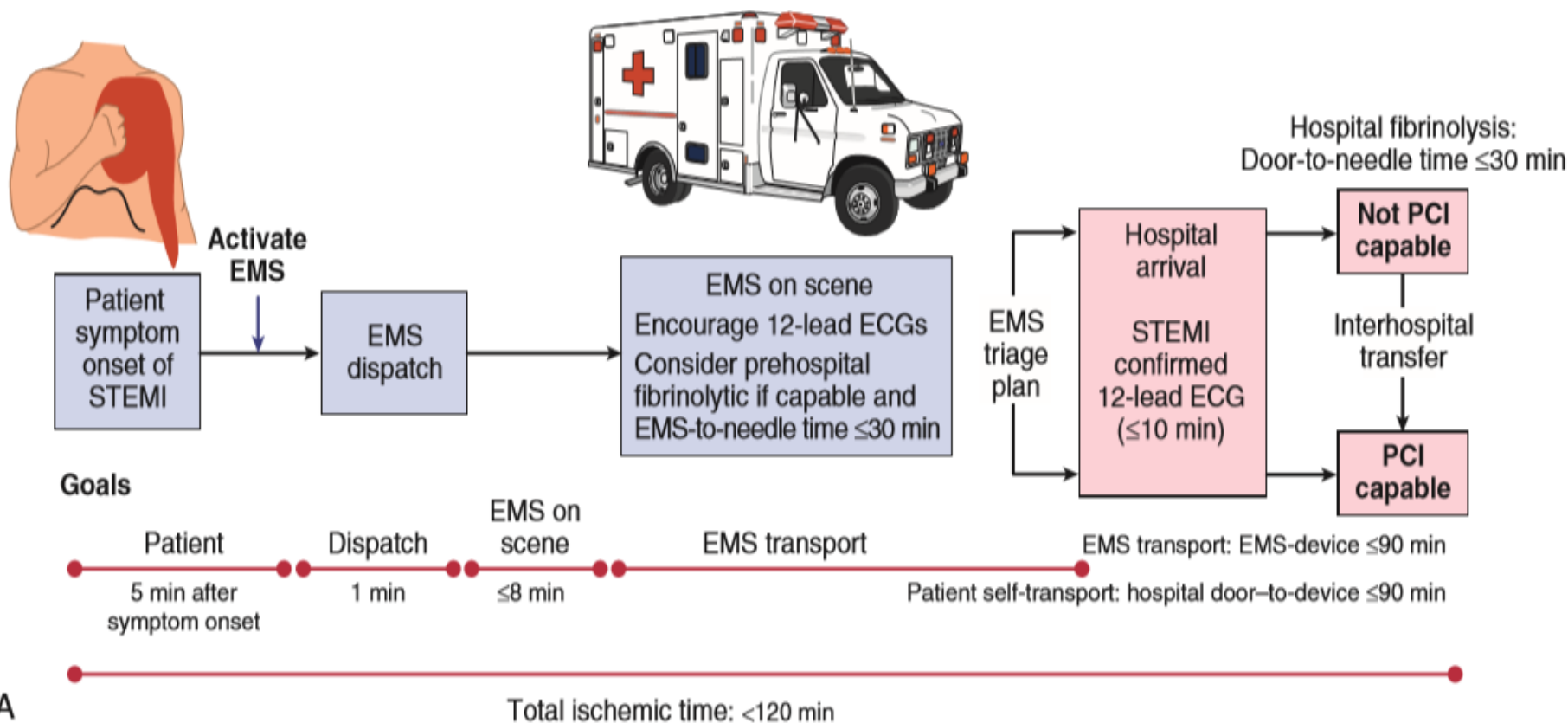
- **Primary PCI is generally preferable to fibrinolytic therapy when time until treatment is short and the patient arrives at a high-volume, well equipped center with experienced operators and support staff.**



Primary PCI cont...

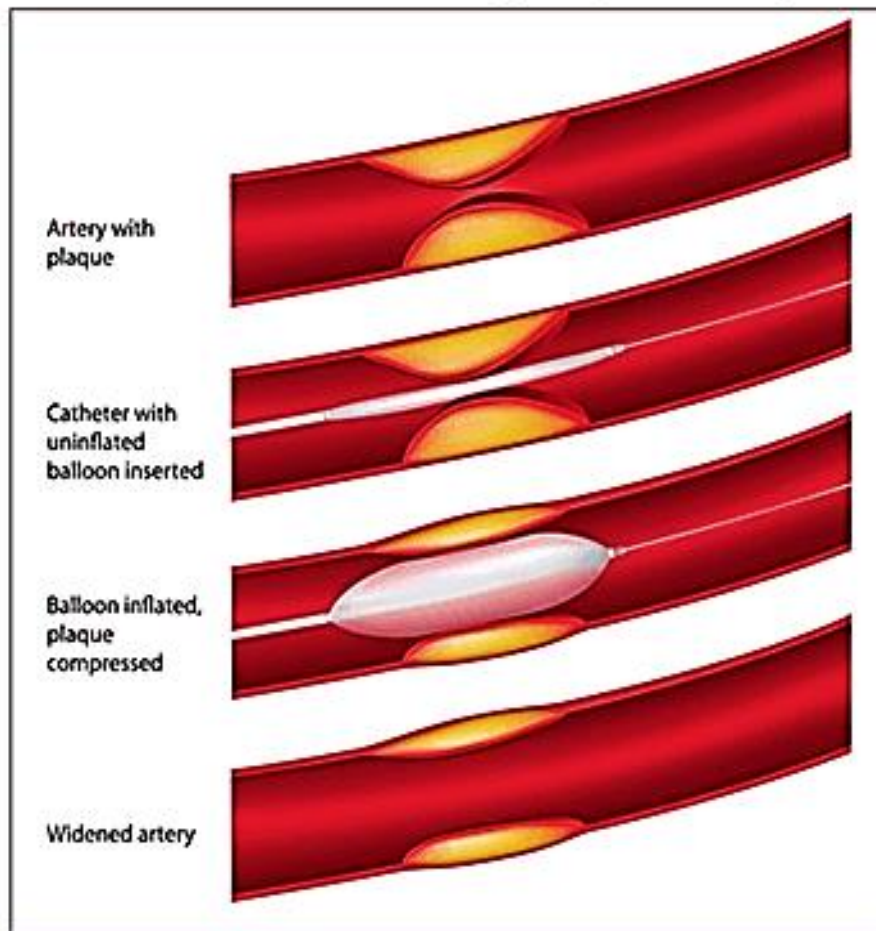
- **PCI is the best option for patients with cardiogenic shock and the only option for patients with contraindications to fibrinolytic therapy.**
- **Primary PCI or Rescue PCI for STEMI is Class I, Level evidence A.**
- **Primary PCI Should be performed as quickly as with the goal of door-to – balloon time 90 minutes.**

Role of EMS in Early Reperfusion Therapy

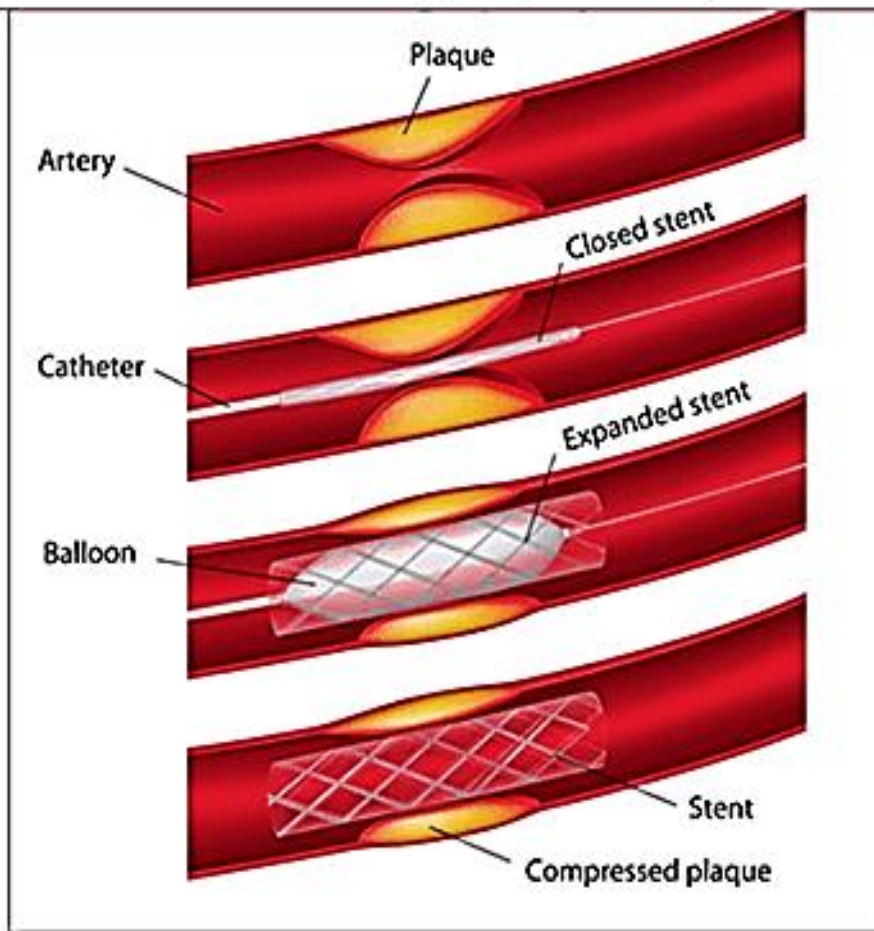




Balloon Angioplasty



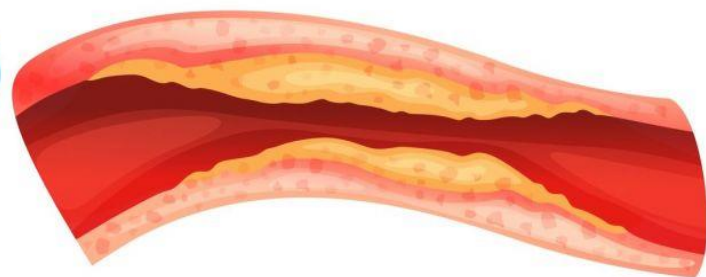
Stent Angioplasty





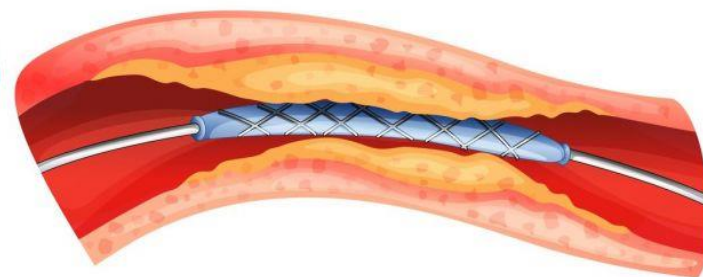
Stent with Balloon Angioplasty

1



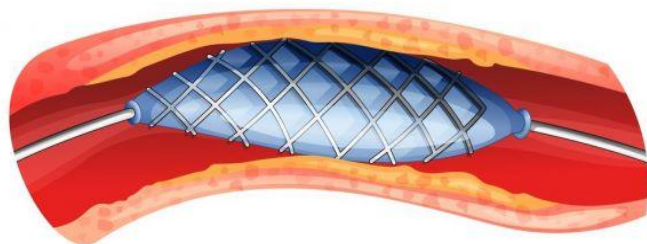
Build up of cholesterol partially blocking blood flow through the artery.

2



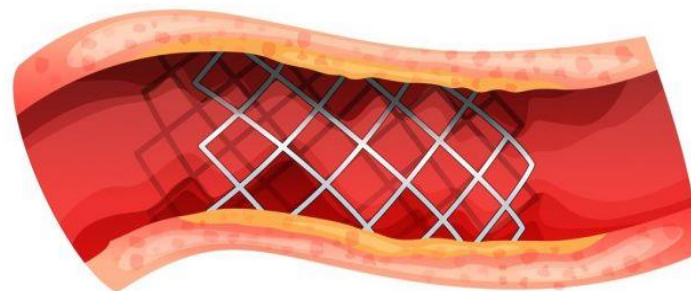
Stent with balloon inserted into partially blocked artery.

3



Balloon inflated to expand stent.

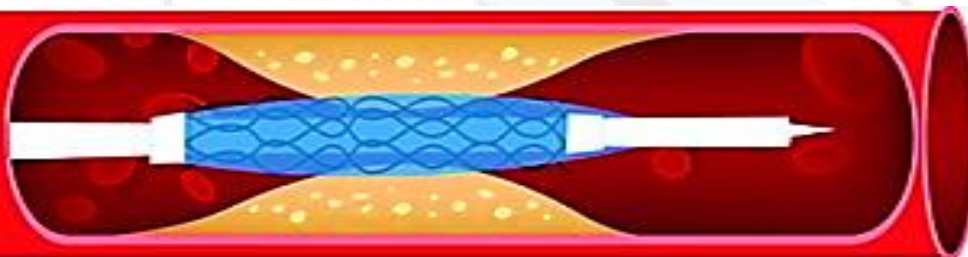
4



Balloon removed from expanded stent.



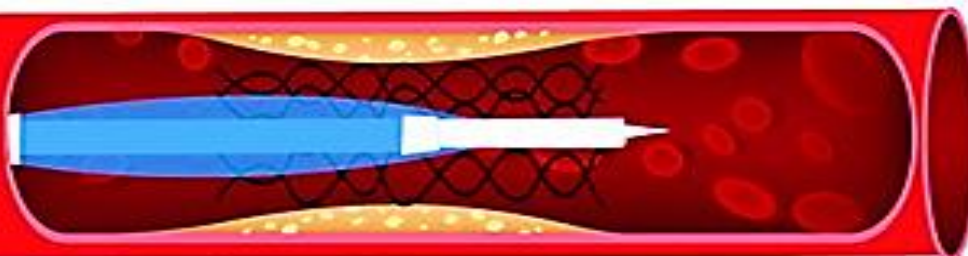
1. The balloon and stent are positioned in the narrowed part of the artery



2. The balloon is inflated and the stent expands, pushing the plaque back against the artery wall



3. The balloon is then deflated and removed, leaving the stent propping open the artery



4. The widened artery improves blood flow to the heart muscle



Stent type

1st generation

2nd generation

3rd generation

Cypher

Taxus

Xience

Endeavor

Promus

Strut wall
thickness
0.140mm

Strut wall
thickness
0.097mm

Strut wall
thickness
0.081mm

Strut wall
thickness
0.090mm

Strut wall
thickness
0.081mm

Stainless Steel

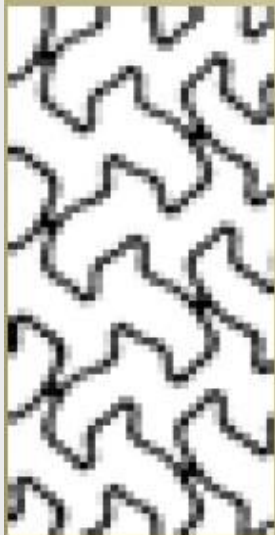
Cobalt Chromium

Platinum
Chromium



Stent type

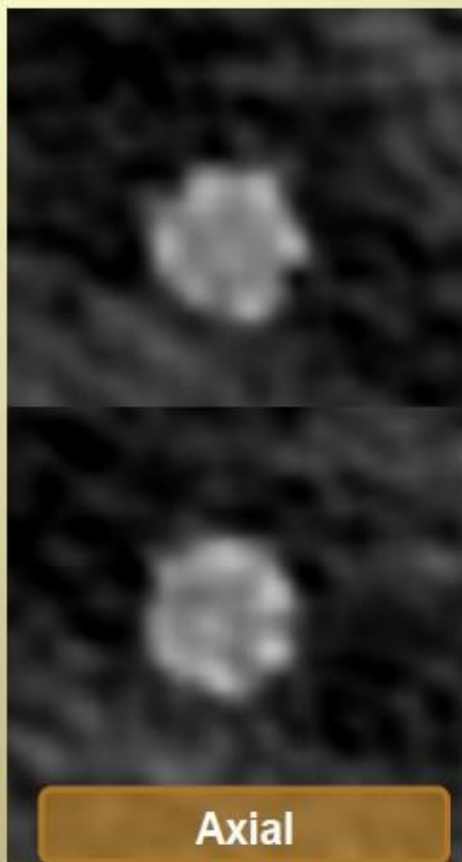
Taxus



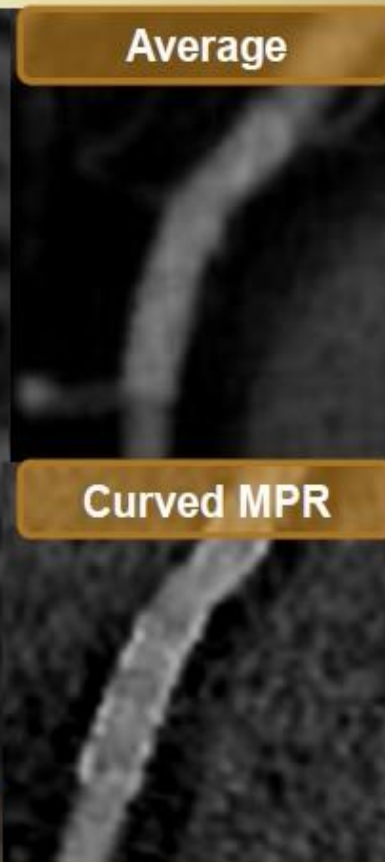
Fluoroscopy



Axial



Average

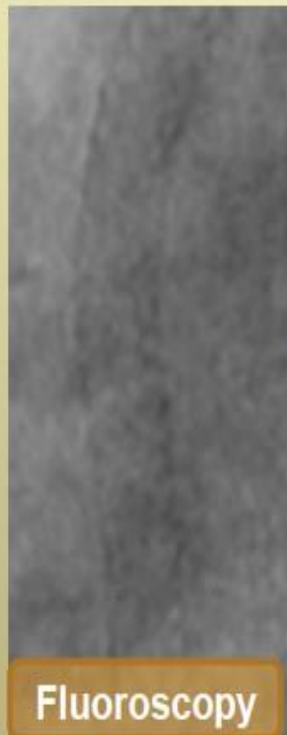


Curved MPR

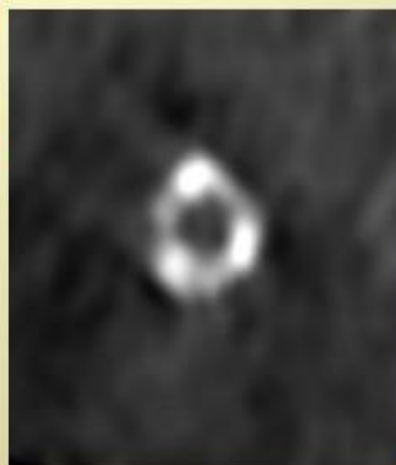


Stent type

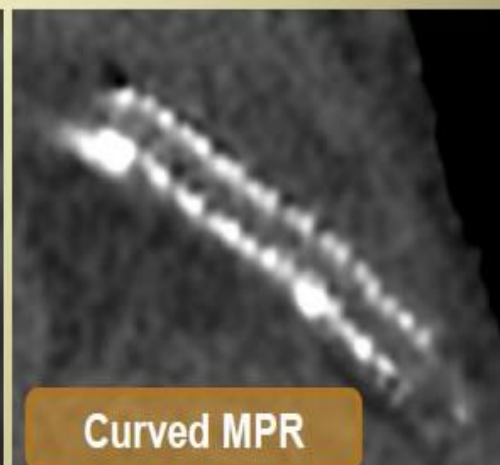
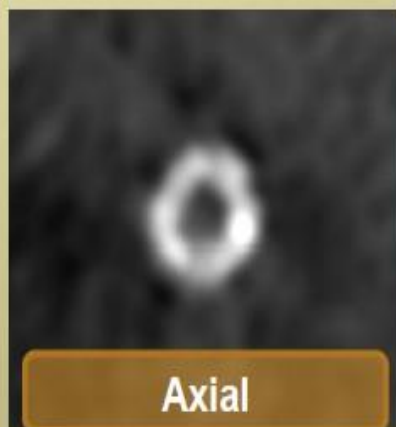
Xience



Fluoroscopy



Axial



Curved MPR

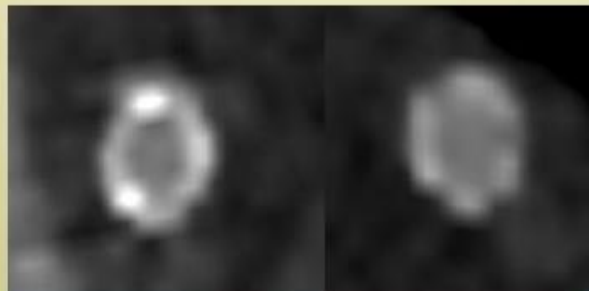
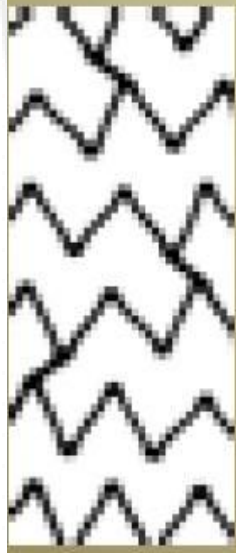


Average

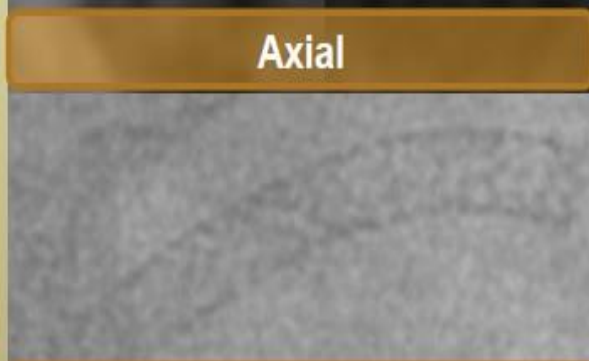


Stent type

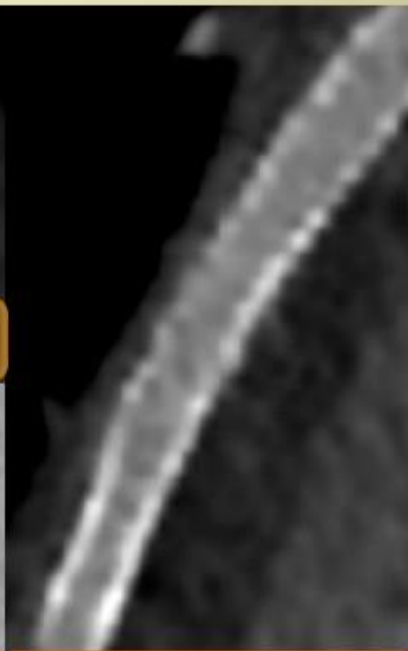
Promus



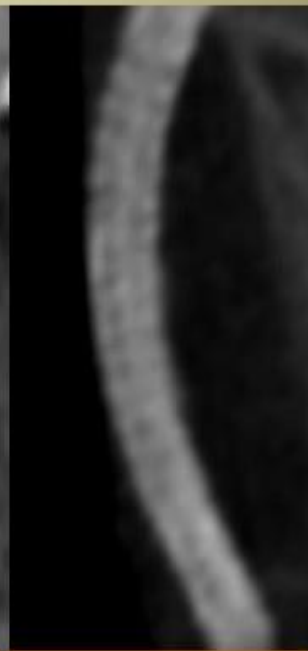
Axial



Fluoroscopy



Curved MPR



Average



معیارهای انتخاب بیمار (سود یا کم خطر بودن)

C	B	A	خصوصیات
20 mm <	10 – 20 mm	10 mm >	طول رگ
پراکنده	مختلف المركز	هم مرکز	تمرکز ضایعه
پیچ های انتهایی	پیچ های ابتدایی	براحتی	دسترسی
90<	45 <	45 >	زاویه
خیلی زیاد	متوسط یا زیاد	عدم یا خیلی کم	کلسیفیکاسیون
کاملاً بسته	بسته	کمی باز	باز بودن مجرا
زیاد	کم	-	وجود لخته
بیشتر از 3 ماه	کمتر از 3 ماه	تازه	زمان درگیری



PERCUTANEOUS CORONARY INTERVENTION

Cardiology Department
Tabriz University of Medical Sciences,
Tabriz, Iran

P.C.I

افراد پر خطر (High Risk)

6- درگیری 3 رگ

7- وجود CRF

9- $EF < 30\%$

1- سن بالای 60

2- زنان

4- تنگی شدید LAD

4- وجود CHF

5- درگیری قسمت ابتدایی LCX



Complications of PCI

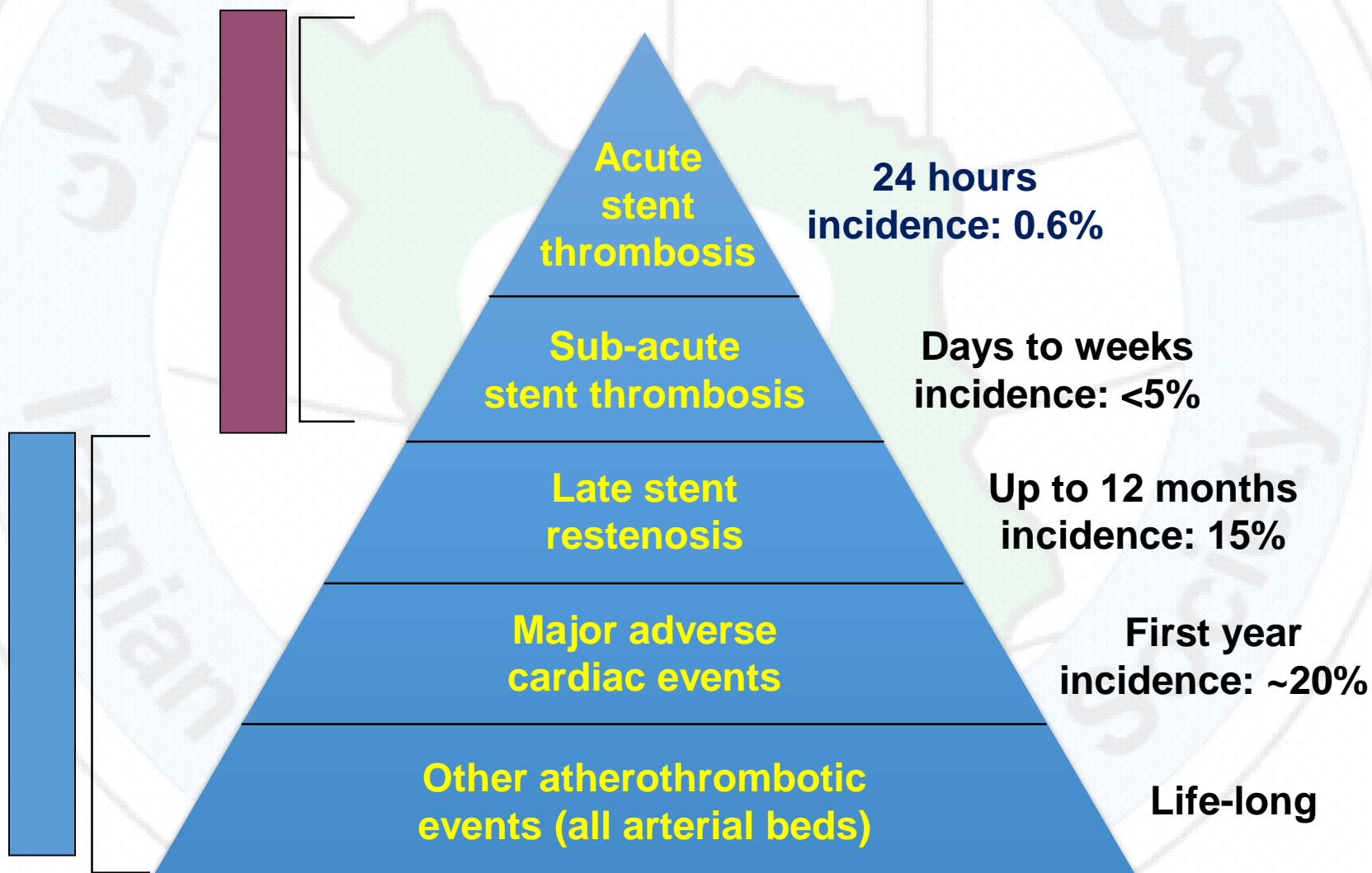
Acute complications:

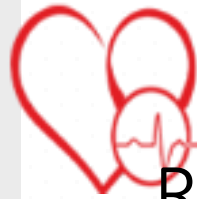
- 1. Coronary spasm**
- 2. Coronary artery dissection**
- 3. Acute coronary Thrombosis**
- 4. Bleeding and hematoma formation at the site of vascular access**
- 5. Contrast- induced kidney failure**
- 6. Dysrhythmias**
- 7. Vasovagal response during remove of sheath(hypotension- bradycardia- diaphoresis)**



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Secondary and Long-Term Prevention: Post-PCI





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Risk factors for In-Stent Restenosis

انجمن ایرانی پرستاران قلب و عروق
Iranian Cardiac Nurses Society

Risk factors for In-Stent Restenosis

• **A: Patient Factors:**

1 DM

2-Acute or chronic Kidney disease

• **B: Anatomic Factors:**

1- Longer lesion(>20 mm)

2-Small vessel diameter(<3 mm)

3- Complex, branched lesions

Complications of PCI cont..

Late complications:

1. Restenosis after PCI (using drug- eluting stents decreased this complication)
2. Late thrombosis



Nursing Management

Monitoring for Recurrent Angina

1. Observe the patient for recurrent angina or ST elevation by use of appropriate monitoring lead.
2. Post procedure angina may be caused by transient coronary spasm or acute thrombosis.
3. Nitroglycerine infused and may be titrated to alleviate of CP.

Nursing Management cont...

Prevention of Contrast- Induced AKI

- Assessment of Kidney function testes
- Protective Strategies such as preprocedure hydration and infusion of sodium bicarbonate.
- After PCI hydration is important to maintain adequate flow through the kidney .



Nursing Management

Monitoring the vascular Access site

1. While the sheath is in place or removal , bleeding or hematoma at the insertion site may occur.
2. The nurse must be observes the patient for bleeding and swelling at the puncture .
3. Control of VS
4. Direct pressure for 15- 30 min
5. CBR for 4-6 hour



Nursing Management CONT..

Monitoring the vascular Access site

1. Use of new Vascular closure Devices.

Patient education

- **Emphasis on use of antiplatelet agent**
- **Report of chest pain (2-14 day after stent placement myocardial infarction may be created.**

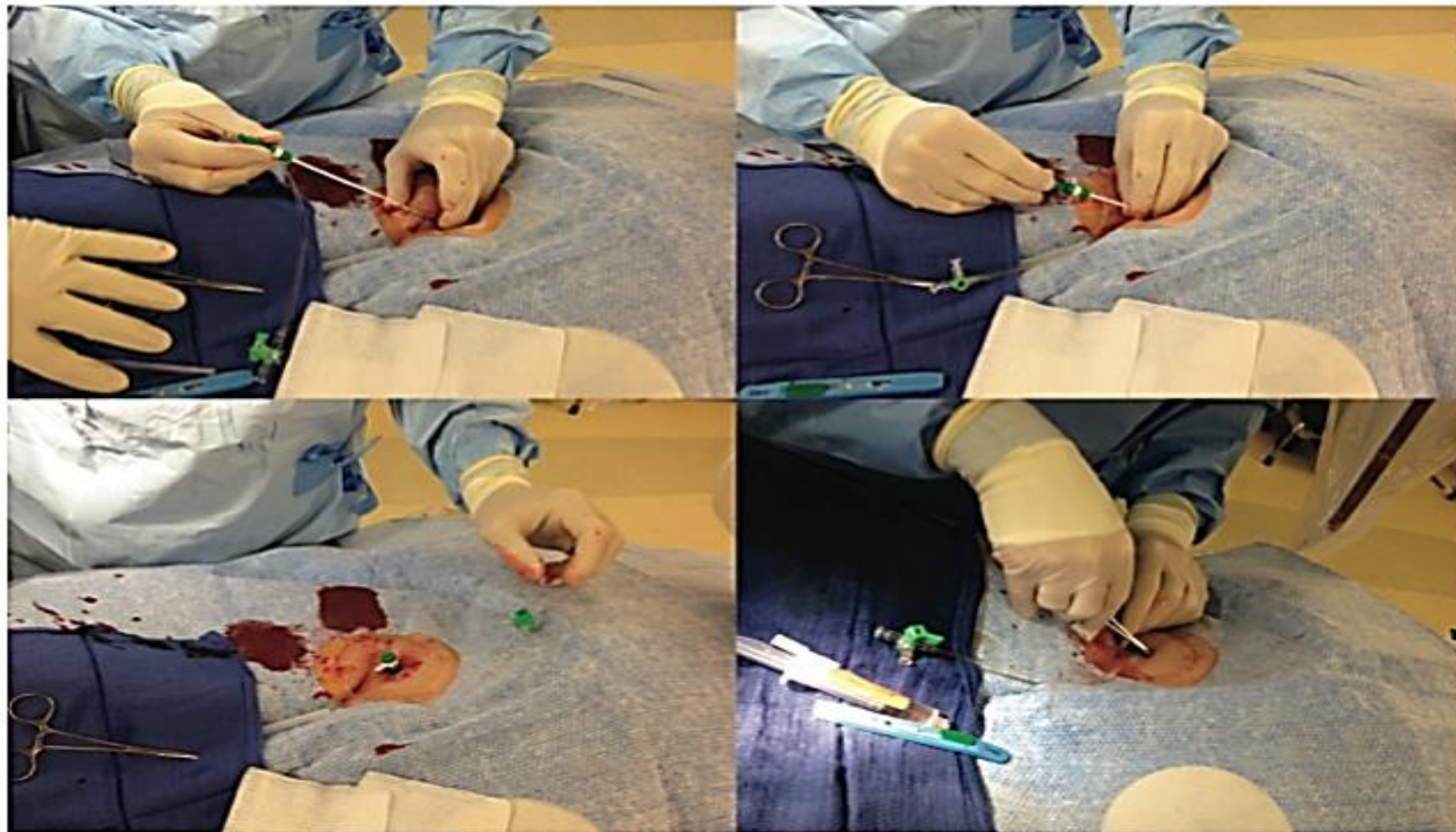


Figure 5. The sheath is inserted over the guide wire (top left) with a rotary motion (top right) and then flushed (bottom left). As shown here, a subcutaneous tunnel is made either over the guide wire or over the sheath.



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Pseudoaneurysm of Common Femoral Artery

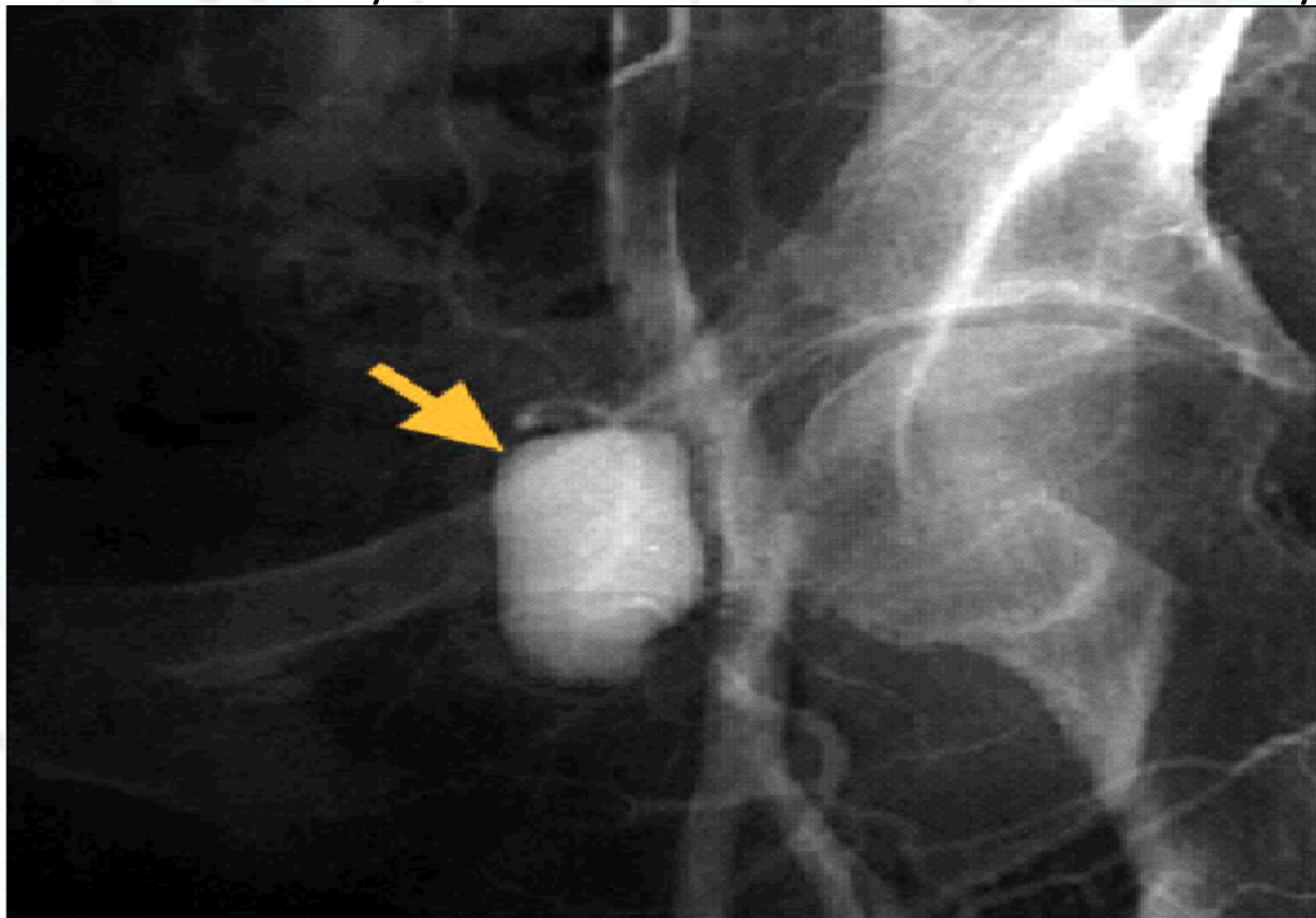




Figure 5. Extensive hematoma after femoral bleeding into soft tissues. Hematoma tracks down all soft tissue planes.

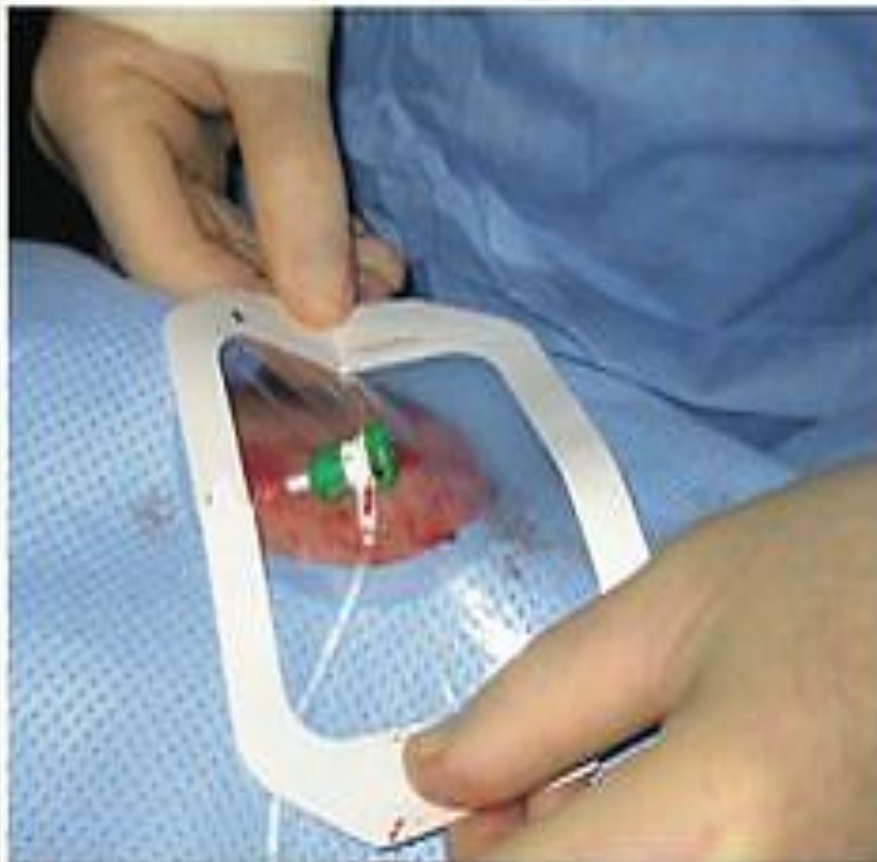


Figure 3. Tegaderm clear plastic bandage used to cover the sheath and secure it in place. Cut an "x" in the part placed over the sheath valve.



Ivognadarnia



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علمی پرستاران قلب





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موسسه تحقیقات قلب و عروق
پزشکی



Angioplasty balloon (inflated).



Figure 1. Proper nicking and spreading of the skin track before puncturing will ensure success of closure.



Angioplasty performed using the radial artery (artery in the wrist).





خارج کردن این شیت که اغلب بعد از پروسیجر آنژیوپلاستی به تاخیر می افتد، همراه با درد و ناراحتی بیمار می باشد.

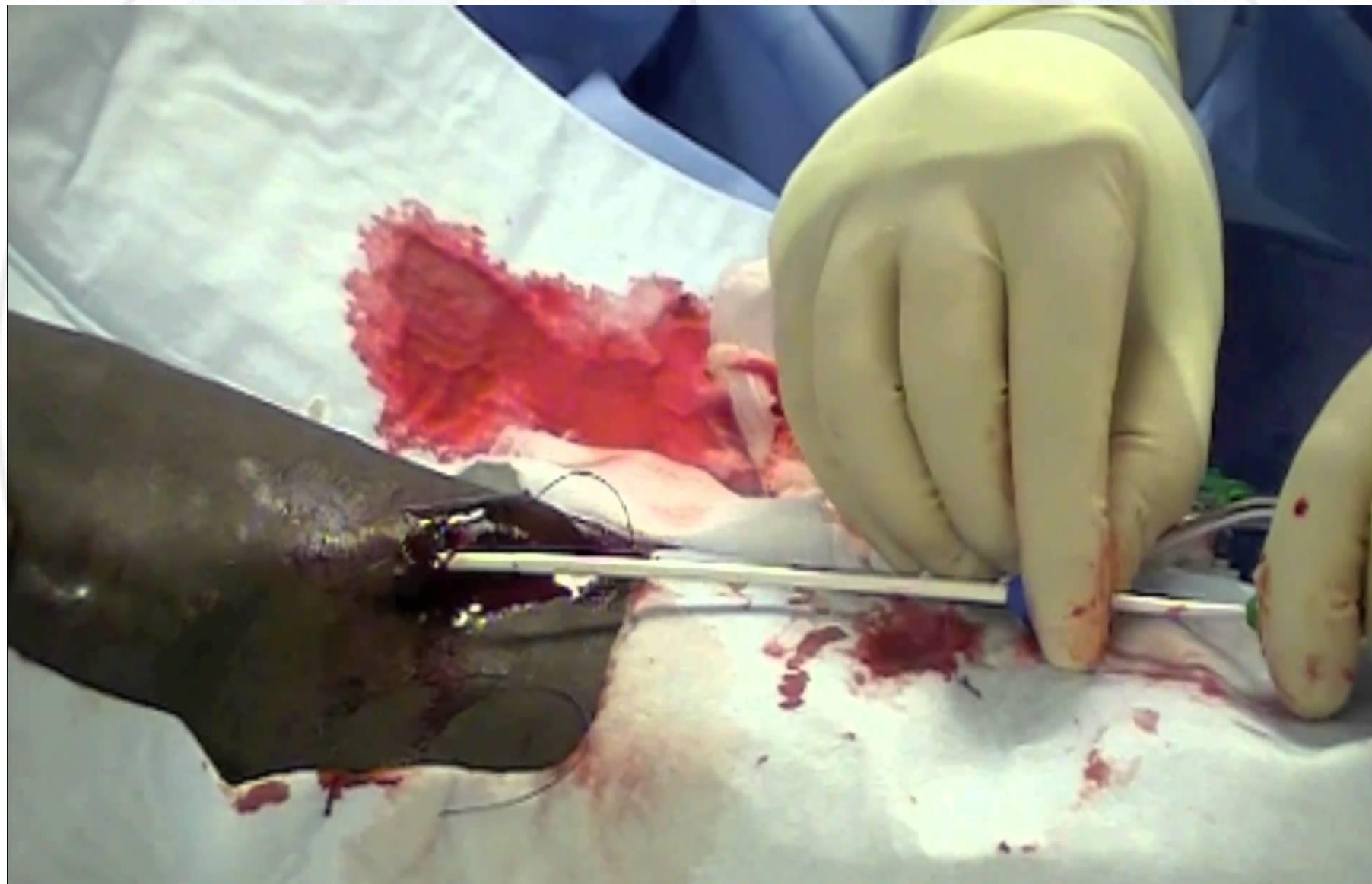
امروزه، به طور فزاینده ای خارج کردن شیت شریانی به صورت پروسیجر پرستاری رایج شده است.





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ملکمی پرستاران قلب



Cardiac Nat

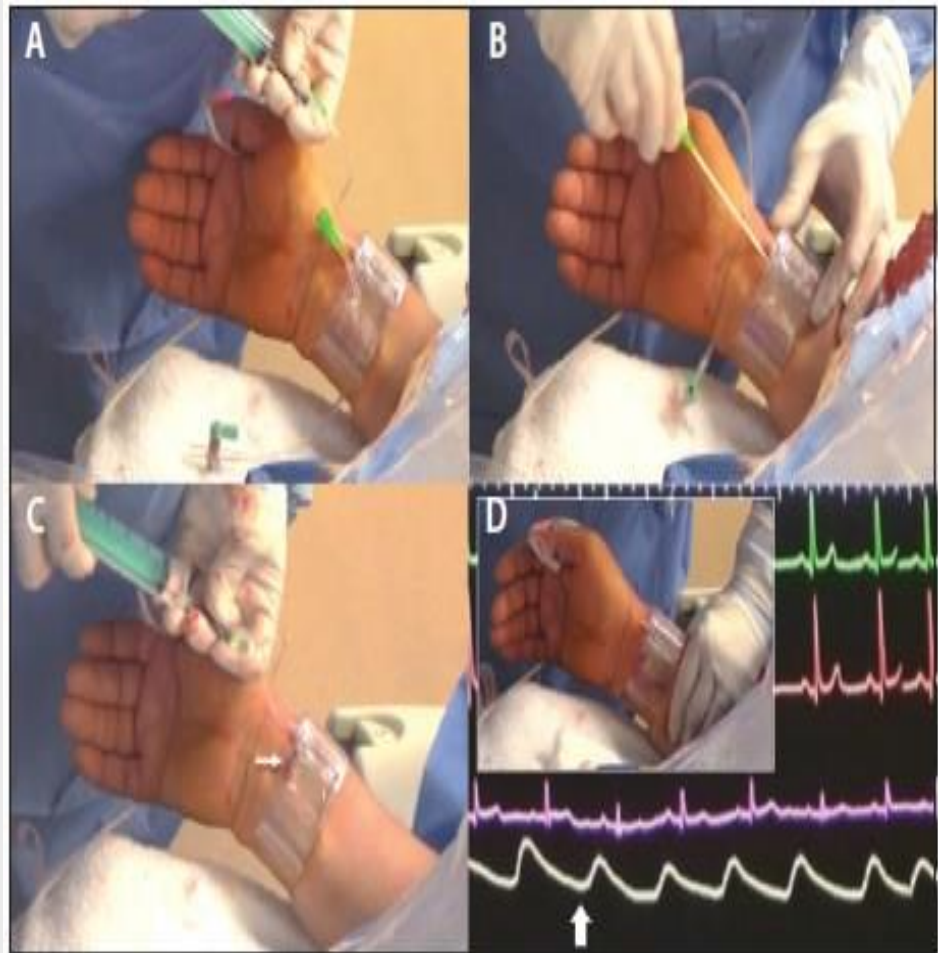
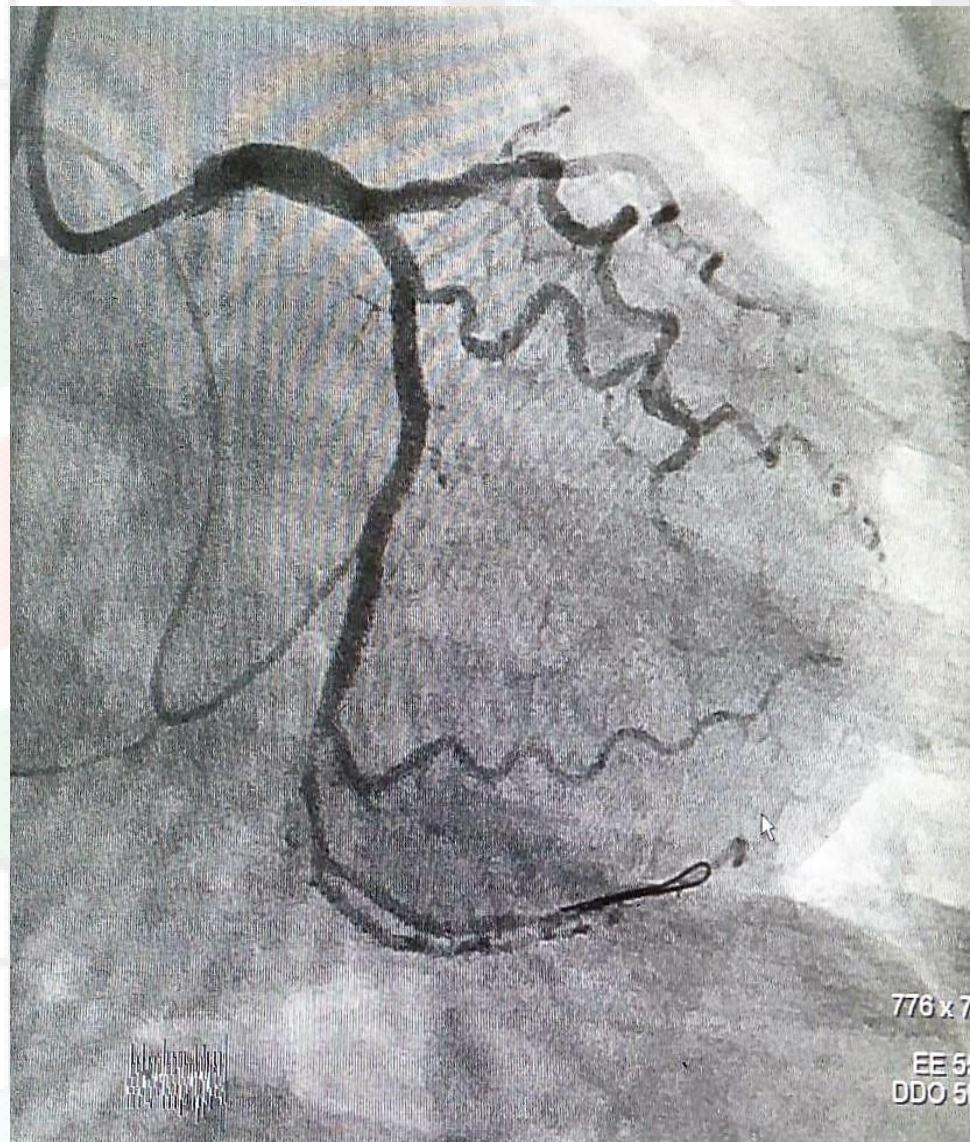
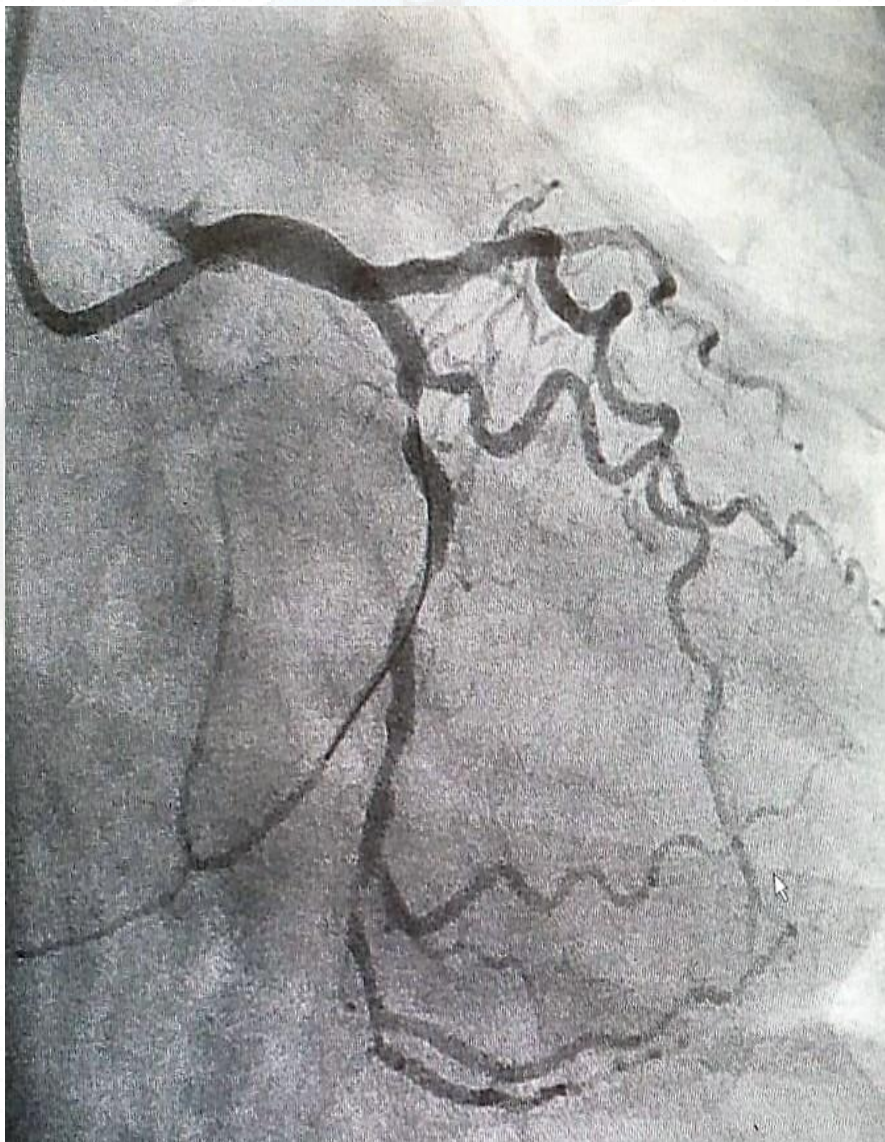
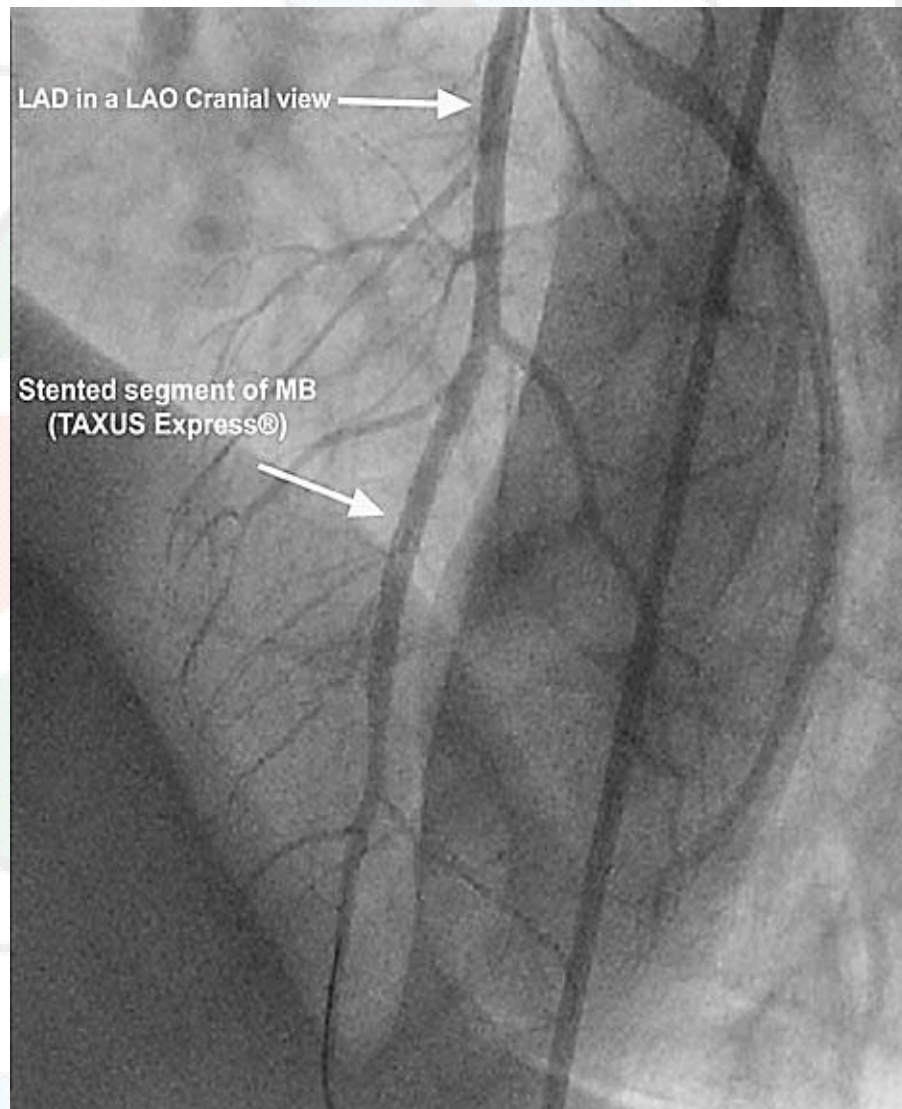
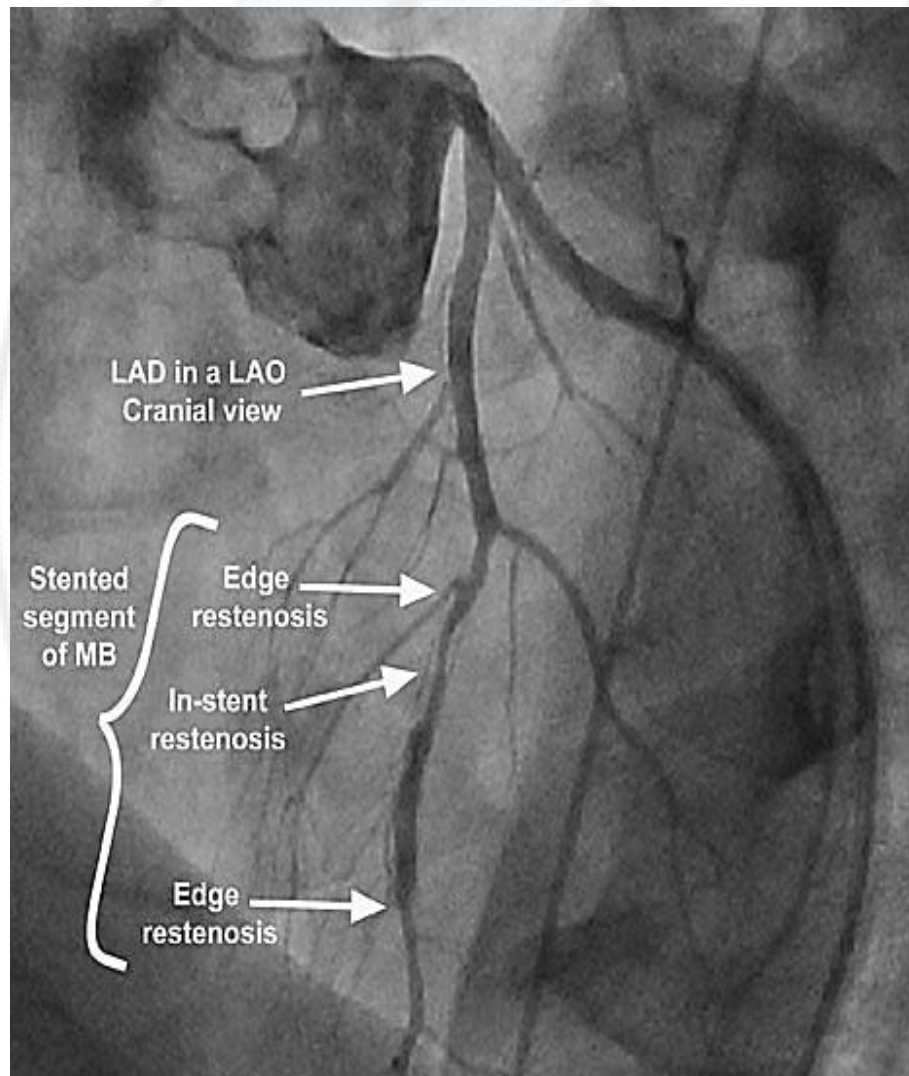
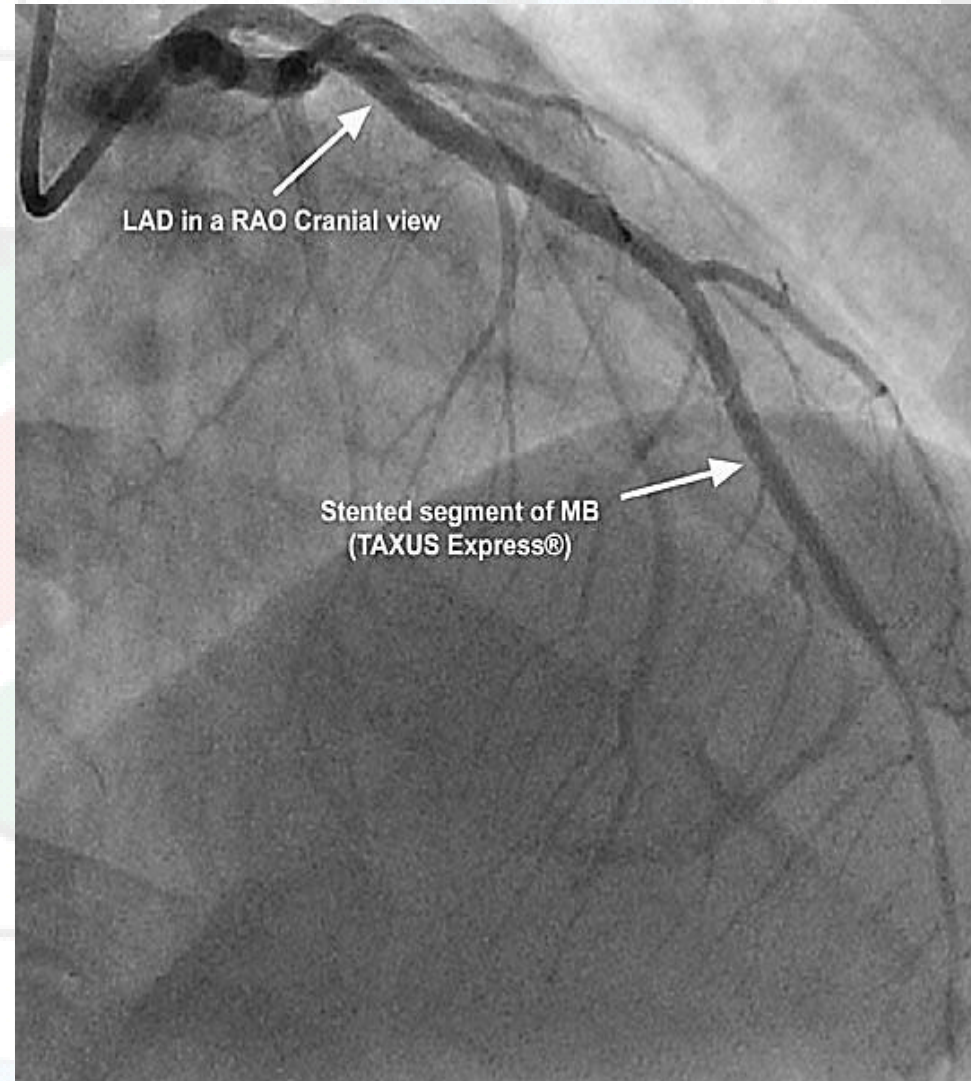
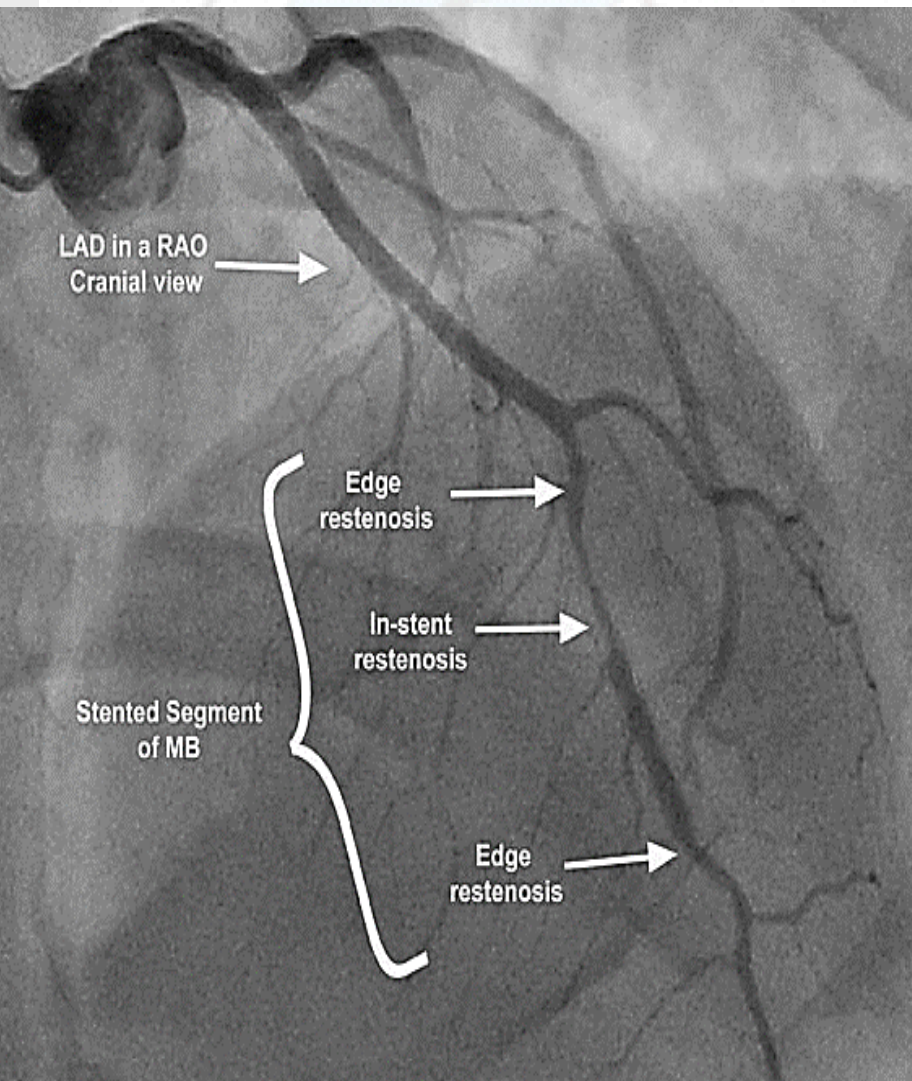


Figure 4. Right posterior leg and heel wound.



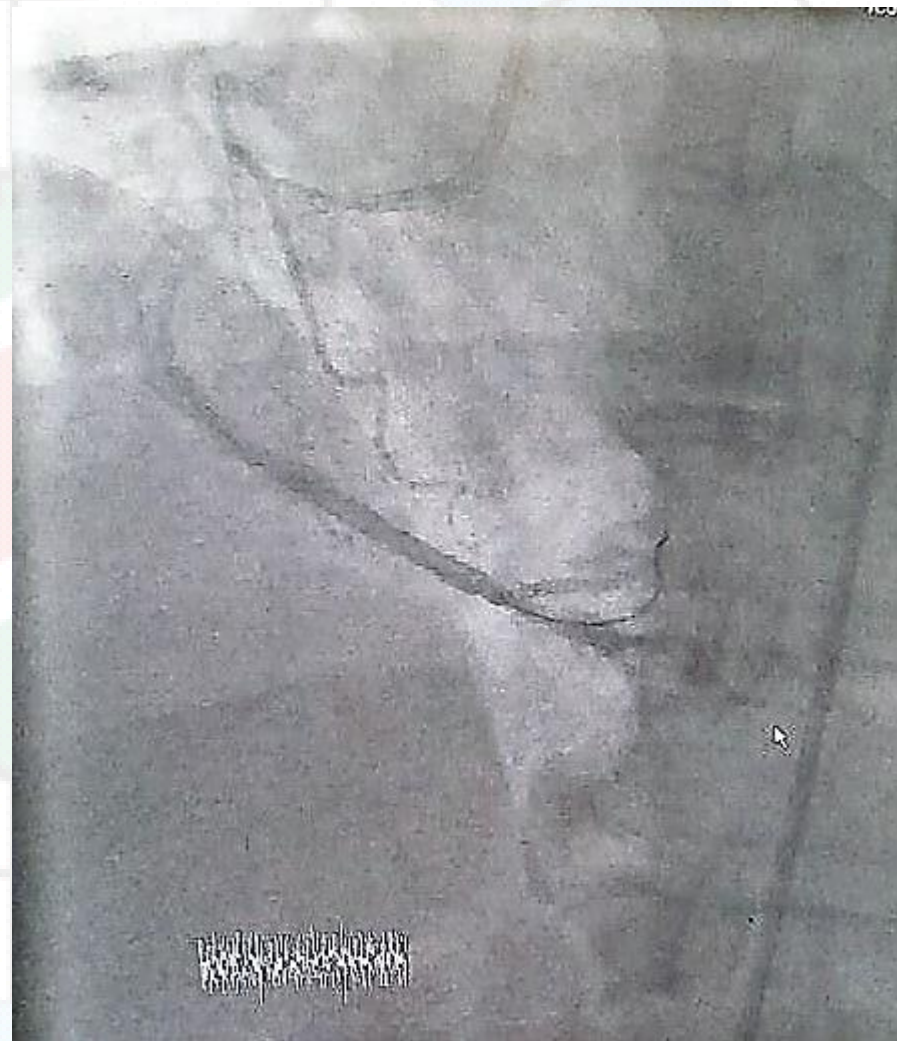
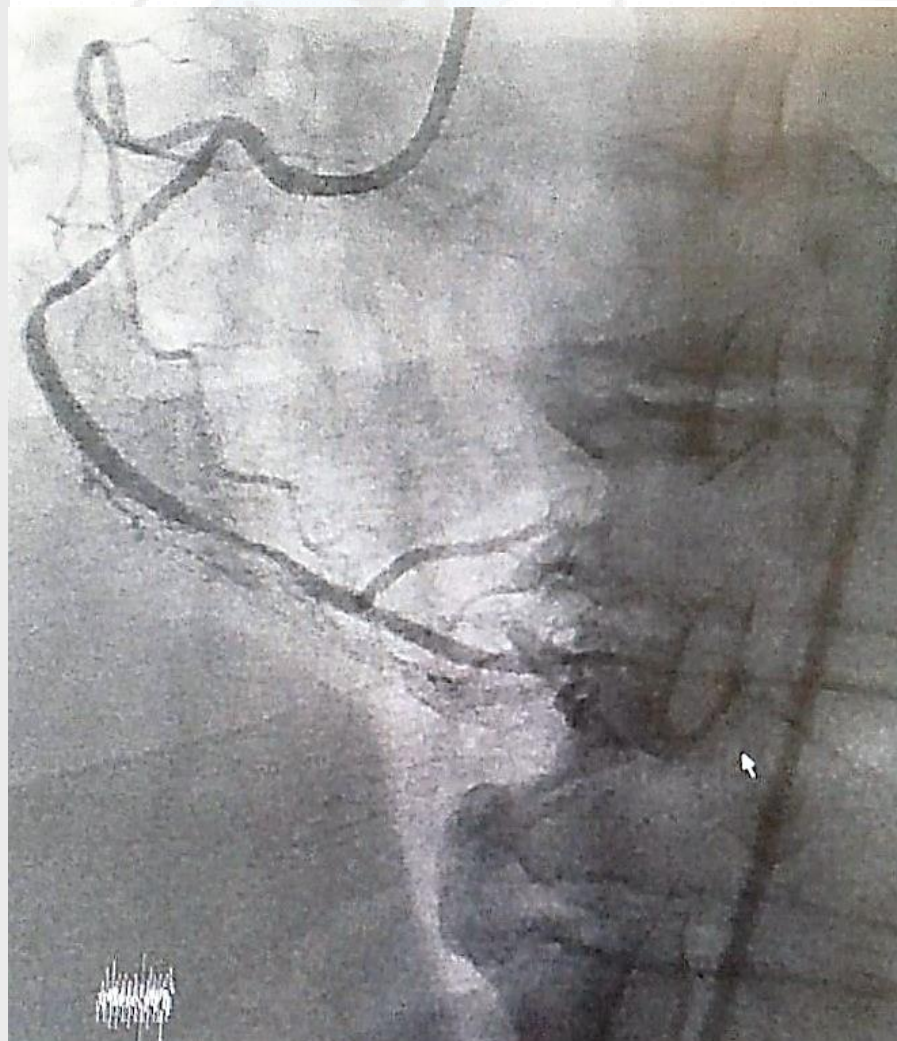






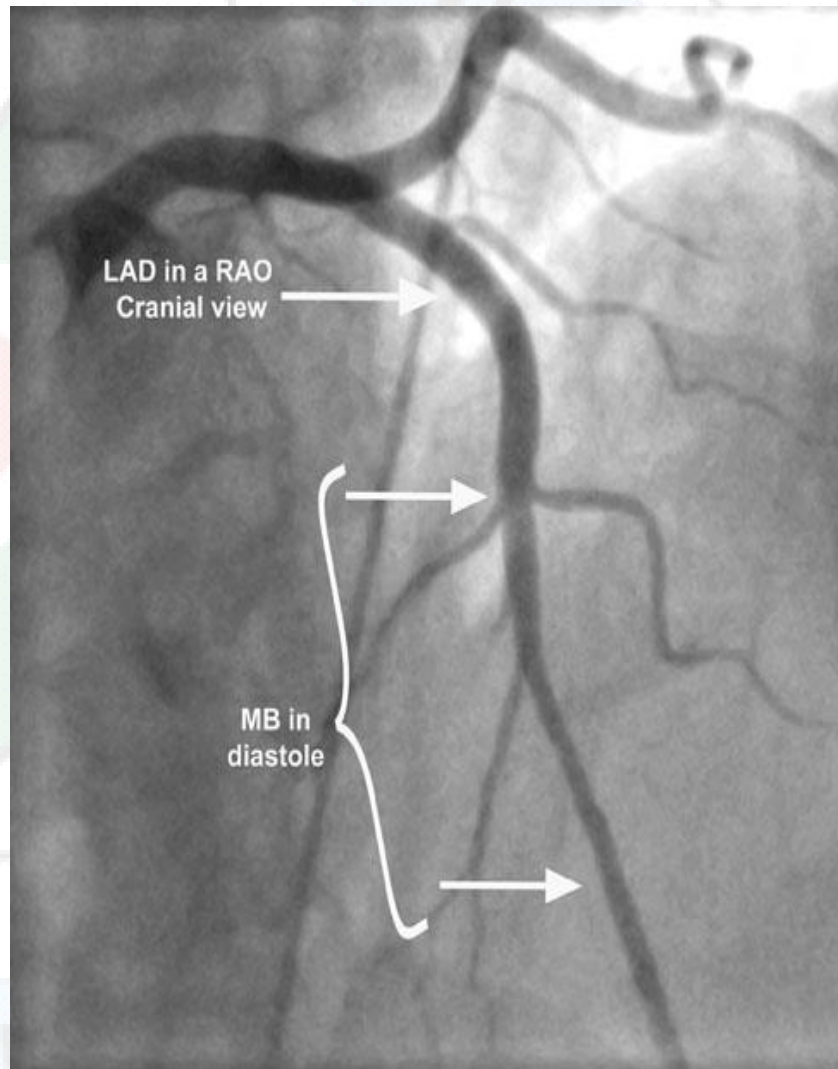
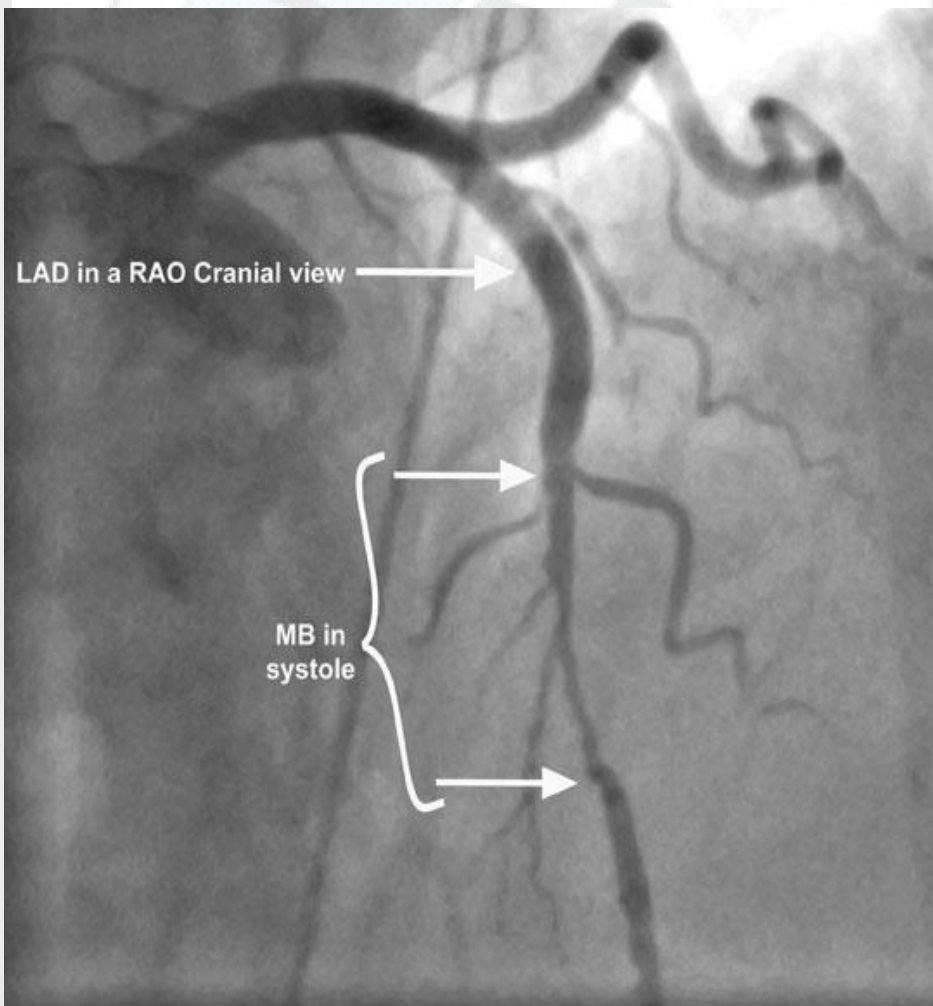
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Tabriz, Iran

علمی پرستاران قلب



Moghadamnia

Cardiac Nurs





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Tabriz University of Medical Sciences,
Tabriz, Iran

با تشکر از توجه شما