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## Introduction

Cardiac Catheterization is a breakthrough in modern medicine. It is a diagnose tool and also a treatment method. It has been used to successfully treat patients with coronary artery diseases and the prognosis is favorable.

## 前言

心導管檢查是近二十多年來醫學界最重要的突破之一，它是一種檢查也是一種治療，目前已成功治療很多冠狀動脈心臟疾病患者，並有良好的預後。

## What is Cardiac Catheterization?

For examination : A catheter is a thin flexible tube and is X-ray impermeable. Under regional anesthesia, the tube is inserted into a blood vessel in your arm or leg and guided to your heart (Fig.1).

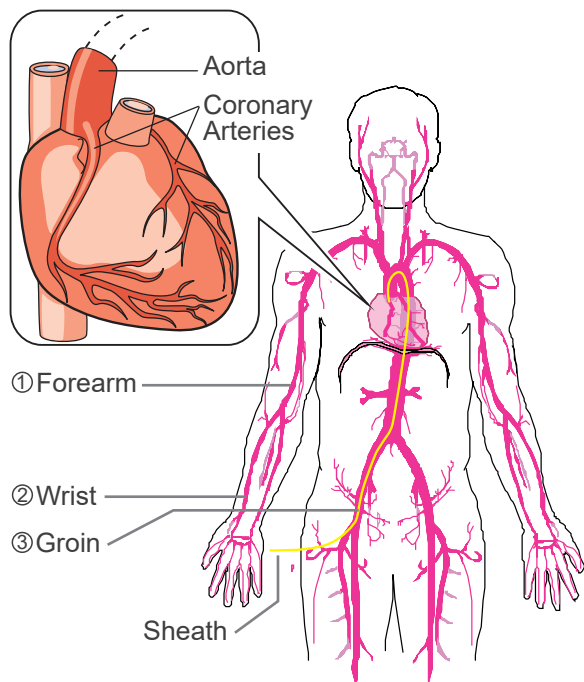
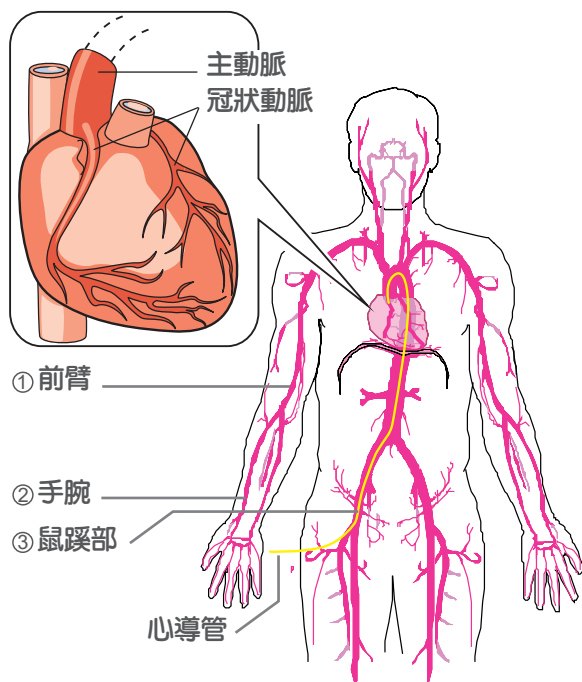


Fig.1 Catheter entry site ①、②、③

## 什麼是心導管檢查

它是一條長又富有彈性且具 X 光不透性的導管。經由下肢股動脈或上肢橈動脈插入，並在局部麻醉下，順著血管一直到心臟所進行的一種檢查(如圖一)。



圖一：常見心導管檢查置入處①、②、③

## Why do I need a cardiac catheterization?

1. Confirm a diagnosis.
2. Examine pressure within the heart as well as how much oxygen is in the blood and determine the need for further treatment.
3. Evaluate the narrowing of the coronary artery and undergo treatment.
4. Evaluate the heart valve function.

## 心導管檢查的目的

1. 確立診斷。
2. 測量心臟的壓力和血中的含氧量，評估是否適合開刀。
3. 評估冠狀動脈狹窄的程度並做治療。
4. 評估心臟瓣膜疾病的嚴重度。

## Cardiac catheterization

For treatment :

1. A catheter is inserted into a blood vessel, the dye is injected and function of cardiovascular system will be examined.
2. If the coronary artery gets narrowed by more than 60-70%, the balloon on the tip of the catheter is then inflated to enlarge the narrowing in the artery and to increase blood flow(Fig.2).

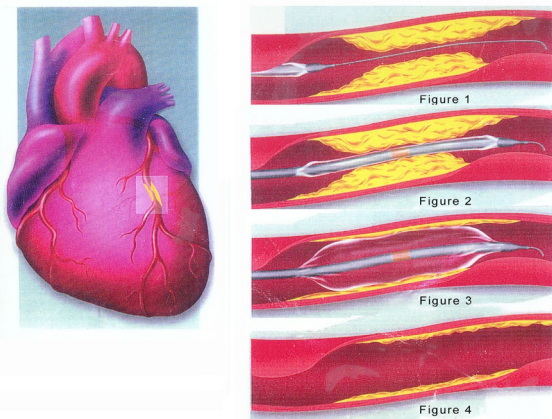
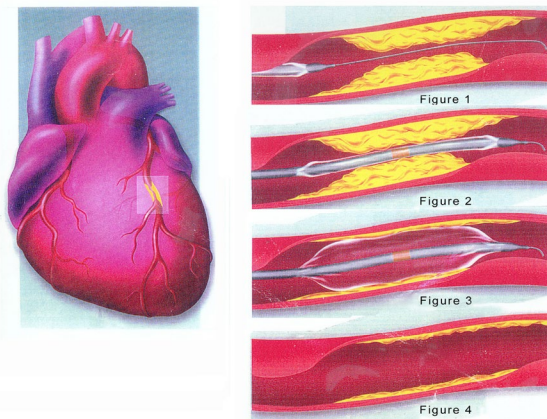


Fig.2 Balloon Angioplasty

## 心導管檢查及治療

1. 導管進入血管中，注入顯影劑，檢查供應心臟的血管是否有異常。
2. 如果冠狀動脈狹窄的部分，超過60-70%的正常管徑，則會將氣球導管擴張，利用壓力將狹窄部分撐開，增加血流量(如圖二)。



圖二：氣球擴張術

3. After evaluation, your physician may use a metal stent to brace the artery open and the stent remains in place to support the walls of your artery(Fig.3).

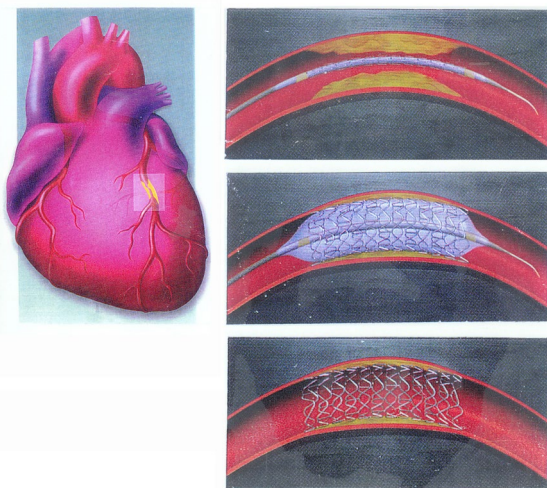
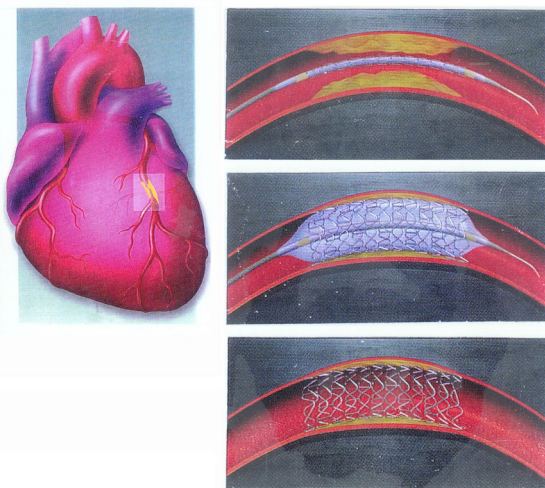


Fig.3 Stenting Angioplasty

3. 經醫師評估後，必要時則放入血管支架，使支架完全撐開血管內壁，並永久留在血管內，以保持血管擴張(如圖三)。



圖三：冠狀動脈內支架術

## Preparation for Cardiac Catheterization

Your physician will order tests, including blood tests, electrocardiogram etc., if you determine to have a Cardiac Catheterization.

1. Preparation you can do the day before the procedure:
  - Fill out the informed consent.
  - Cannot eat or drink after 12:00a.m. the day before.
  - Remain relaxed and avoid overstrain.
2. Preparation nurses will do before the procedure:
  - Clean your skin and shave any hair around the catheter entry site (arm or groin).
  - Mark the placement of pulse at the wrist and on the top of foot to observe pulse rhythm.
  - Give you IV injection if necessary.

## 心導管檢查前的準備

當決定接受心導管前，我們會為您作一系列的檢查，如：血液檢查、心電圖檢查…等。

1. 前一天您應準備的工作如下：
  - 填寫同意書。
  - 晚上12點後禁食。
  - 保持心情輕鬆、避免過度緊張。
2. 當天護理人員會為您準備的工作：
  - 協助刮除心導管插入處的毛髮（檢查處）。
  - 在手腕或足背的脈搏跳動處劃記號，以便檢查後觀察脈搏跳動的情形。
  - 必要時會先為您打上點滴。

## During the procedure

1. As you enter the procedure room, you will be mildly sedative and be attached to an EKG monitor. You will remain conscious during the procedure, so when you feel discomfort do tell your doctor immediately.
2. When the catheter inserts into the artery, you won't feel it. You may be asked to cough during the procedure.
3. The procedure usually takes 1-2 hours.
4. When your doctor finds blockages in your blood vessel, your health care providers will explain to your family the necessary medical treatment such as angioplasty or stenting . With a successful angioplasty, the blockage will be pushed outward against the artery walls and the blood flow is restored.

## 檢查中

1. 進入檢查室後，會為您裝上心電圖監視器並進行局部麻醉，此時您的意識是清醒的，如有不適情形隨時告訴您的醫師。
2. 當導管放入血管中，並不會有異樣感覺，在進行中常需要您配合做咳嗽的動作。
3. 心導管檢查一次的時間約1-2小時即可完成。
4. 當血管阻塞嚴重時，醫師會向您的家屬解釋，並說明必須做的醫療處置，如氣球擴張術或置放支架，使阻塞的血管達到擴張及通暢。



## After the procedure

1. Health professionals will closely monitor your blood pressure, heart rate and incision bleeding; during recovery, be sure to report anything that feels abnormal or not right to your health care providers.
2. If the catheter entry site is at your wrist, the incision will be bandaged for 3-6 hours (Fig.4). If the catheter insertion site is in your groin area, the incision will be closed with gauze with applied pressure for 6 hours.




Fig.4 To apply pressure around the wrist area to stop bleeding.

## 檢查後的注意事項

1. 醫護人員會密切監測您的血壓、心跳及傷口是否有出血情形，如有不適應立即通知醫護人員。
2. 當導管插入處是從手腕處時，會以紗布覆蓋並用止血帶加壓止血約3-6小時（如圖四）；若導管插入處在鼠蹊部，則會以2公斤砂袋加壓止血約6小時。



圖四：手部加壓止血

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3. When the catheter entry site is in your groin area, you have to lie in the bed for 6-8 hours and keep your legs straight to prevent bleeding.
  4. Be sure to let your health care providers know if you feel limb numbness , cold or any discomfort.
  5. Depend on your recovery, your can expect your hospital stay after the procedure to last from 1 to 2 days. When you leave the hospital, you will be given specific instruction for follow-up care or things you should pay attention to. Be sure to ask your doctor any question that's on your mind.

3. 導管插入處在鼠蹊部時，應平躺6-8小時，檢查的肢體盡量伸直勿彎曲，避免出血。
4. 觀察檢查的肢體血液循環，是否有冰冷及麻木感的情形發生，如果有此情形則應立即通知您的醫護人員。
5. 通常手術後1-2天即可回家，回家前醫師會再為您做一次詳細的解說，並提醒您應該注意的事項，若有問題隨時可提出討論。

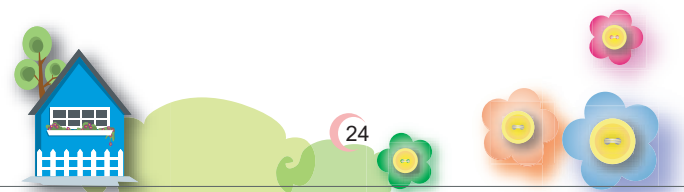
## Daily care after discharge

1. Take your medicine and have the follow-up visits on time.
2. Choose to have Low fat, low salt and low sugar diet.
3. Remain relaxed and avoid overstrain.
4. Smoking and drinking cessation.
5. Weight control.
6. Avoid intense exercise and heavy lifting.
7. Appropriate exercise
  - Do appropriate exercise at least 3 times a week and a minimum of 30 minutes for each time.
  - Aerobic exercise, such as walking, bicycling, swimming, Tai chi chuan, and Waidangong, is recommended after the procedure.
8. Please feel free to contact us for any further consultation.

## 出院後的日常保健

1. 按時服藥並回門診定期追蹤。
2. 選擇低油、低鹽、低糖的飲食。
3. 放鬆心情、避免壓力過大。
4. 戒煙、戒酒。
5. 控制體重。
6. 避免劇烈運動及提重物，以減少心臟負荷。
7. 適當的運動：
  - 運動的時間以一週至少3次、一次至少30分鐘為原則。
  - 運動項目以散步、騎腳踏車、游泳、太極拳、外丹功等有氧運動為主。
8. 若有不適及疑問，隨時與我們的健康諮詢專線聯絡，我們會隨時為您解答。





敬祝您  
身體健康 平安吉祥

Wish you  
Healthy & Peaceful

## 佛教慈濟醫療財團法人

### 各院區健康諮詢專線

Health consultancy of Buddhist Tzu-Chi Hospital :

花蓮慈濟醫院 Hualien Tzu Chi Hospital : (03)8562016

玉里慈濟醫院 Yuli Tzu Chi Hospital : (03)8882718-9

關山慈濟醫院 Kuanshan Tzu Chi Hospital : (089)8148000-128

台北慈濟醫院 Taipei Tzu Chi Hospital : (02)66289779-2236

台中慈濟醫院 Taichung Tzu Chi Hospital : (04)25368069

大林慈濟醫院 Dalin Tzu Chi Hospital : (05)2648333

斗六慈濟醫院 Douliou Tzu Chi Hospital : (05)5372000-127

嘉義慈濟診所 Chiayi Outpatient Department of Dalin Tzu Chi Hospital : (05)2167000

網址 Web site : <https://dalin.tzuchi-healthcare.org.tw/>

大林慈院 113. 修訂

E8R2878627-03



佛教大林慈濟醫院  
Buddhist Dalin Tzu Chi Hospital

# 認識 心導管檢查

## Cardiac Catheterization

中英文