

# 屯門醫院兒童及青少年科

Department of Paediatrics & Adolescent Medicine

## 動脈導管結紮手術是怎樣進行的？

## 手術後有何成效？

醫生會先在嬰兒的左胸上方開一個傷口(約3-4cm)，透過胸腔鏡在傷口內用一個金屬夾子閉合動脈導管或用縫線結紮動脈導管；同時會在傷口插入引流管，以引流出胸腔內積集的液體。

我們的醫護人員會護送嬰兒到瑪麗醫院進行導管結紮手術。因為手術是於瑪麗醫院進行的，所以你需要與該院的心臟科醫生面談，以了解手術詳情並簽署手術同意書；有需要時醫生會抽取母親的血液為嬰兒配血。

手術後，待嬰兒的情況穩定下來便會返回屯門醫院繼續緊密監察。嬰兒的心臟衰竭及呼吸急促之情況需時改善，故此嬰兒需於手術後留在病房，以觀察其維生指標及生長情況。

## 手術後身體上的傷口要怎樣護理？

嬰兒左胸上方的傷口會縫上縫合線；而引流管一般會在手術後一兩天經醫生檢查後被移除，並縫上縫合線及蓋上棉紗，醫護人員會定時觀察傷口有否滲流。手術後約七至十四天醫生會拆除縫合線；如使用的是可吸收縫合線則不用拆除，讓皮膚自行吸收。

## ? 參考資料

Brighton and Sussex University Hospitals NHS Trust. Patent Ductus Arteriosus (PDA). August 2011.

黃秋惠，曾慶方，游繡華 (2008)封面故事；開心長大—早產兒開放性動脈導管

[Electronic version]. 人醫心傳, 49, 14-21. Retrieved December 2, 2012 from

<http://www.tzuchi.com.tw/file/tcmed/200801-49/default.htm>

## 鳴謝 Acknowledgement

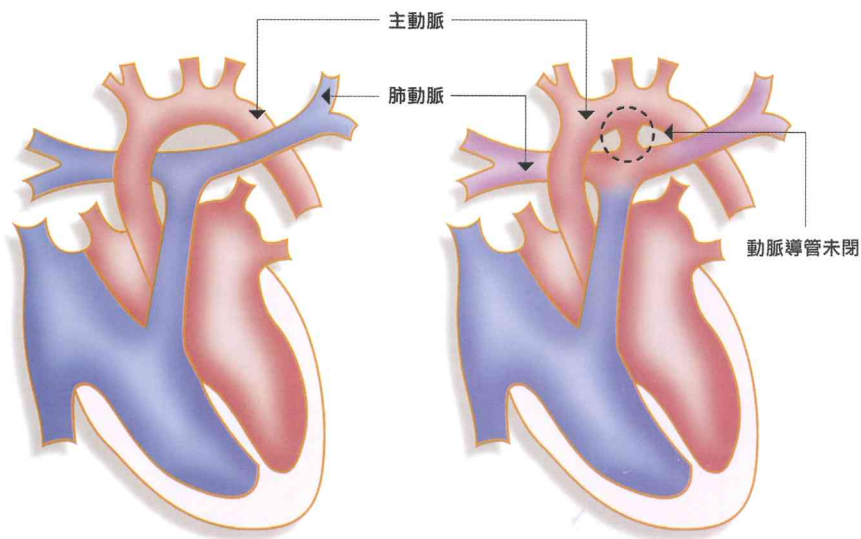
新界西醫院聯網  
New Territories West Cluster

病人啟力基金  
Patient Empowerment Programme



## 甚麼是動脈導管未閉？

**動**脈導管是一條細小的肌肉性血管，由肺動脈連接到主動脈。在胎兒時期肺是不用工作的；但是當出生後，肺便要開張呼吸。足月的嬰兒會隨着呼吸運作而將此動脈導管閉合，但部份早產兒的動脈導管未能成功閉合，便是「動脈導管未閉」。



相較於正常的心臟(左)，右圖中在主動脈與肺動脈之間產生一道連結，即「動脈導管未閉」，通常足月生產的嬰兒，動脈導管會自發地關閉，但早產兒則可能留下這道導管。

## 動脈導管未閉有何表徵及症狀？

- ♥ 嬰兒會有呼吸急促，血含氧量會降低、甚至窒息等情況
- ♥ 心臟會有雜音，心跳率高企(每分鐘170次以上)
- ♥ 肺部有積水情況
- ♥ 嬰兒比較容易疲倦
- ♥ 體重增長不合乎理想進度

## 動脈導管未閉是怎樣診斷出來的？

醫生會聽診嬰兒的心臟，持續性監察其維生指標，並抽取血液進行化驗，及做胸肺X射線照片對照。如有懷疑，會做心臟超聲波檢查，以觀察動脈導管的大細及其影響。

## 怎樣控制動脈導管未閉的情況？

### 4.1 保守療法

- ♥ 限制嬰兒的水份吸收，以減少肺積水量
- ♥ 當嬰兒呼吸困難時提供氧氣治療並緊密監察其成效，有需要時會使用呼吸機輔助
- ♥ 有需要時醫生會處方利尿劑給嬰兒，將身體內多餘的水份排出來以改善心臟衰竭的情況

### 4.2 藥物閉合治療

若保守療法未能讓動脈導管收縮，醫生會處方非類固醇抗炎藥物(Non-Steroidal Anti-Inflammatory Drugs) (例如；異丁苯丙酸 Ibuprofen)予沒有禁忌情況的嬰兒。此藥每日一次透過血管輸入或口服，一般以三日為一個療程；治療期間醫護人員會緊密監察嬰兒有否因藥物而出現副作用。若未能成功收縮動脈導管，醫生會跟據嬰兒的情況而決定是否重複療程。醫護人員會為你安排面談並提供資料以了解治療詳情，當嬰兒情況許可時才開始藥物療程。

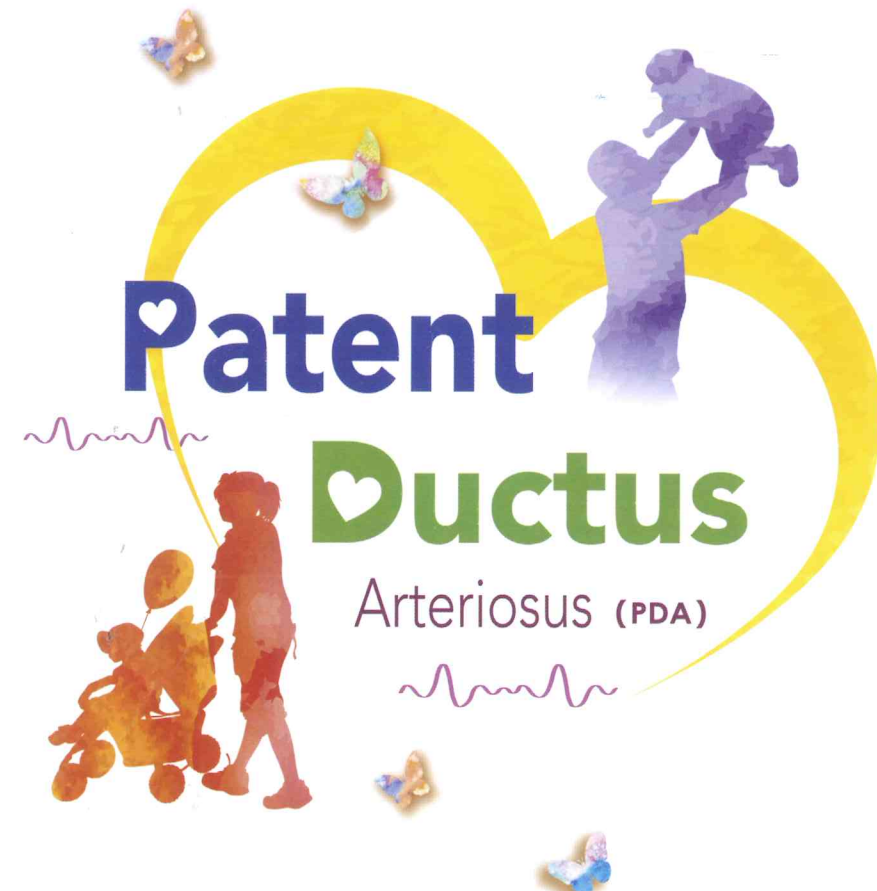
### 4.3 外科手術閉合

一般而言，醫生會先用藥物控制病情及觀察導管閉合情況。若然藥物效果不佳、或是嬰兒無法使用藥物治療，醫生會跟你商討進一步的治療方案。嬰兒經過評估後可能會進行外科結紮手術以閉合動脈導管；結紮手術會於香港的瑪麗醫院小兒心臟科進行。



# Tuen Mun Hospital

Department of Paediatrics & Adolescent Medicine



# Patent Ductus Arteriosus (PDA)

## How the operation is performed and what is the expected outcome ?

The operation (PDA Ligation) is carried out through a cut (around 3-4cm) in the left side of the chest with a clip or thread ligating the PDA. At the same time, a drain will be inserted to the left chest during the operation to drain out the blood and body fluid accumulated.

Your baby will be escorted to QMH by our transport team for operation. As the surgery is carried out in QMH, you will need to see the cardiac surgeons there for operation details and sign the consent form. Mother's blood will be taken by doctor for baby's cross-match if necessary.

After PDA ligation, your baby will be transferred back to Tuen Mun Hospital when the condition is stable. You may find it takes a while for your baby to show improvement in cardiac and respiratory functions following surgery. The baby's condition will be continued to be monitored in NICU/SCBU unit.

## Is there a post-operative wound and how is cared ?

After PDA ligation, there is a sutured thoracotomy and drain wound over left side of chest. The drain is usually removed on the 2nd to 3rd post-op day after wound assessment by doctors. Dressing will be applied to the thoracotomy and drain wound. It will be kept intact to observe for oozing. If the stitches are non-absorbable, they will be removed on 7-14th days after operation. If they are absorbable, they will be left intact to allow spontaneous reabsorption.

## ? Reference

Brighton and Sussex University Hospitals NHS Trust. Patent Ductus Arteriosus (PDA). August 2011.

黃秋惠, 曾慶方, 游繡華 (2008)封面故事; 開心長大—早產兒開放性動脈導管 [Electronic version]. 人醫心傳, 49, 14-21. Retrieved December 2, 2012 from <http://www.tzuchi.com.tw/file/tcmed/200801-49/default.htm>

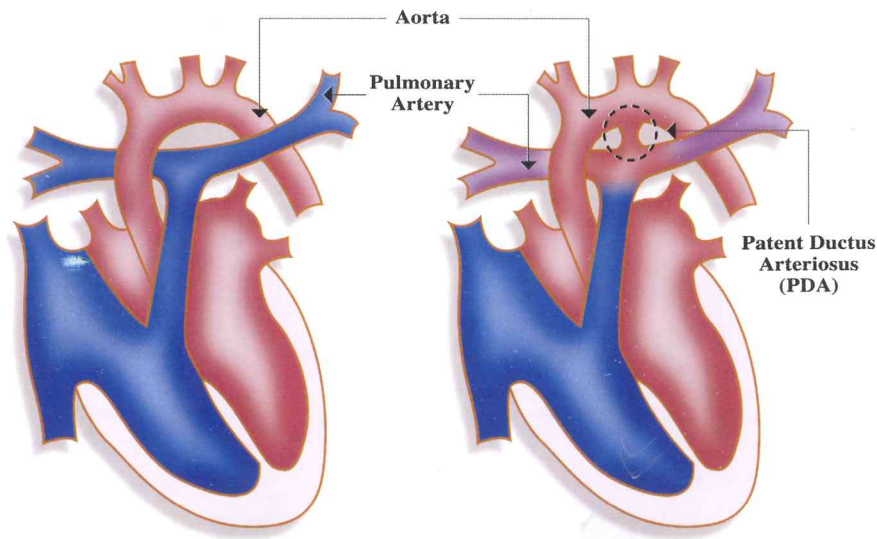
## 鳴謝 Acknowledgement

新界西醫院聯網  
New Territories West Cluster

病人啟力基金  
Patient Empowerment Programme

## What is the Ductus Arteriosus (PDA) ?

**The** Ductus Arteriosus is a small muscular blood vessel that joins the pulmonary artery to the aorta. The lungs do not need to work before birth. At birth the lungs expand and start to work. In full term babies, the duct begins to close in association with first breaths. However, in premature babies the duct may remain open and this is called a Patent Ductus Arteriosus (PDA).



Comparing with the normal heart (left diagram), the duct between the aorta and pulmonary artery is still open in right diagram, which is 'Patent Ductus Arteriosus (PDA)'. It closes spontaneously in full term babies but may remain open in premature babies.

## What are the signs and symptoms ?

- ♥ Fast breathing rate, high oxygen requirement, or even apnoea (prolonged breathing pause)
- ♥ Heart murmur, fast heart rate (>179 beats per minute)
- ♥ Fluid in the lungs: extra blood flows to the lungs
- ♥ Easy fatigue
- ♥ Poor growth and weight gain

## How is PDA diagnosed ?

The doctor will auscultate your baby's heart, review the vital signs, check blood results and take chest X-ray of your baby. If PDA is suspected, an Echocardiogram will be done to confirm the clinical suspicion.

## How is (PDA) initially managed ?

### 4.1 Conservative treatment

- ♥ You baby's total fluid intake may be restricted. This will help to reduce the excess fluid in the lungs.
- ♥ If breathing problem presents: oxygen or ventilator support will be provided with close monitoring.
- ♥ Doctor may prescribe medication to help excrete some of the extra fluid if necessary. Diuretics help the body to remove extra fluid by producing more urine.

### 4.2 Closure by medication

If conservative treatment fails, the doctor will prescribe a medicine called Non-Steroidal Anti-Inflammatory Drugs (e.g. Ibuprofen) if there are no contraindications. It is given once per day intravenously or orally, for 3 days per course. The course of medicine may be repeated once if PDA persists. The baby will be put under close monitoring. The doctors will explain the treatment details and provide relevant information to you.

### 4.3 Surgical treatment

Generally, PDA is first treated with the medication approach, depending on the size of PDA and baby's condition. Follow up Echocardiogram will be performed to assess the effectiveness of the drugs. If the PDA does not respond to medication, the doctors will discuss with you for further treatment options. Your baby may need surgical closure of the PDA. Surgery is carried out in the cardiac center in Queen Mary Hospital (QMH).

