

# Patent Ductus Arteriosus: Case Report

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## Abstract

The ductus arteriosus derived from the sixth aortic arch, connecting the main or proximal left pulmonary artery to the descending aorta. ductal shape, length, and diameter are variable which may influence efficacy of various therapeutic approaches <sup>(1, 2)</sup>. PDA (patent ductus arteriosus) increases in infants with low birth weight. In full-term newborns the ductus usually closed within the first ten hours of life by physical examination and within two days by echocardiography <sup>(3)</sup>. Complex maternal and fetal prostaglandins' interactions regulate the ductal closure <sup>(4)</sup>. PDA flow turbulence is significant to produce a murmur is commonly thought to be capable of producing a jet lesion and increase the risk of endocarditis justifying closure <sup>(5)</sup>.

## Case report

A 9 years old boy presented complaining from recurrent chest infection and delayed resolved pneumonia on examination of the chest and pericardium showed machinery murmur at the left parasternal area, on chest radiography there is enlarged pulmonary artery area fig.(1). ECG done for the patient with normal pediatrics

pattern (T-wave inversion). echocardiographic study done to this child which demarcate the presence of moderate sized PDA (12.5mm) in size with left to right shunting and the patient has no other cardiac anomalies fig.(2). the patient is fully prepared in cooperation with the anesthetic team to decide the pre-operative, per-operative and post-operative care.

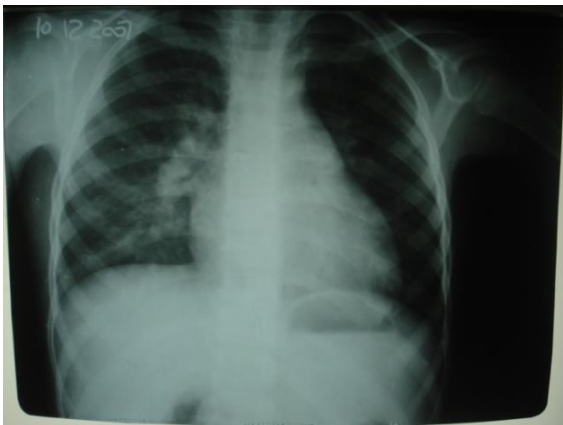
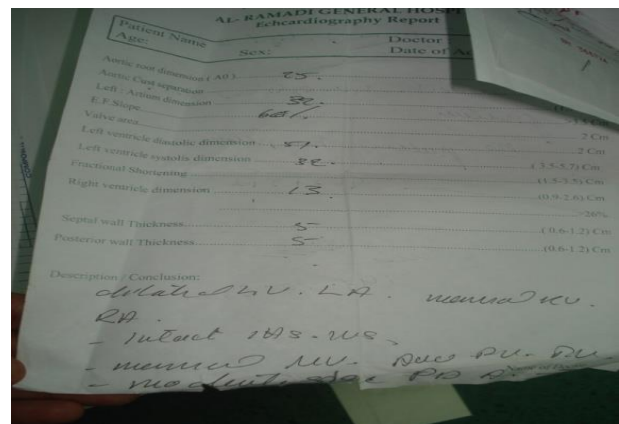


Fig.

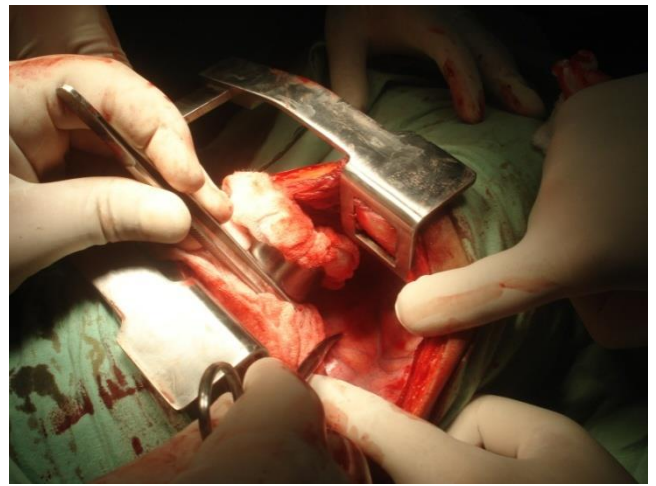
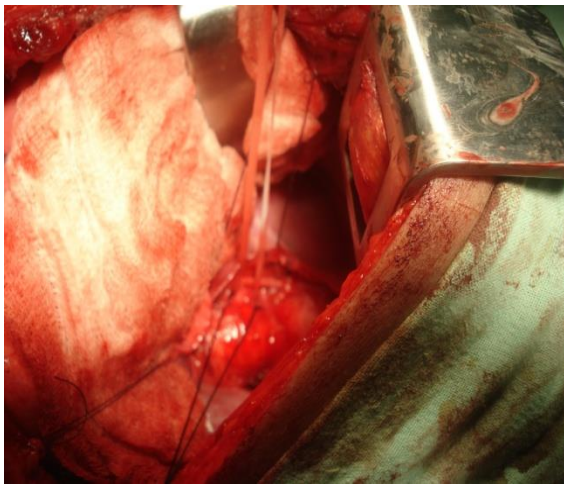
Classical left postero-lateral thoracotomy at fourth intercostals space, incision of the mediastinal pleura at the thoracic descending aorta identification of the ductus and putting a ligature around it fig.(3) the ligation of the ductus with two ligature and trans-fixing suture used to confirm the stability of the ligation.



(1)

Fig. (2)

Smooth first post-operative day and the patient discharged at home after 6 days. After two weeks post-operative echocardiography study confirm the total closure with no residual leak through the ductus.



**Fig. (3)**

### **Discussion:**

Forty percent of patients with untreated PDA would die by the age of 45 years <sup>(6)</sup> physical examination and echocardiography form the foundation for PDA diagnosis. Characteristic machinery murmur radiating from the pulmonic area to the midclavicular area is highly suggestive and confirmation with echocardiography <sup>(7)</sup>. transcatheter closure is routinely and effectively used in PDA <sup>(8)</sup>. primary surgical closure still used in premature and large PDA or for Trans catheter closure complications <sup>(8,9)</sup>.

PDA is approached via left thoracotomy under general anesthesia, pleura over the upper portion of the descending thoracic aorta is incised. A right angled hemostat is passed beneath the ductus from its inferior side then the ligature in singly or doubly ligated.

PDA ligation or division has been a reliable, effective, and safe procedure for decades of practicing this procedure <sup>(10)</sup>.

Potential complications include pneumothorax , hemothorax, chylothorax, residual air leaks and vascular injuries <sup>(10, 11)</sup>.

Video-assisted thoracoscopy has been used for PDA ligation. The risk of catastrophic bleeding appears to be greater than classical thoracotomy <sup>(12, 13, 14)</sup>.

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