

# Cierre percutáneo de DAP en Niños Pequeños y Prematuros

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# Cierre de Ductus en Niños Pequeños



# Cierre de Ductus en Niños Pequeños

JACC: CARDIOVASCULAR INTERVENTIONS

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## Transcatheter Occlusion of Patent Ductus Arteriosus in Pre-Term Infants

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# Cierre de Ductus en niños pequeños

**Table 1. Characteristics of 8 Pre-Term Infants Undergoing Coil Occlusion of the PDA**

Patient #	Gestation (Weeks)	Age at Procedure (Weeks)	Weight (g)		Symptoms	Trial of Medical Management
			Birth	At Procedure		
1	28	8	700	1100	Heart failure, failure to thrive ROP stage II	Yes
2	31	3	1,700	1,300	Heart failure, failure to thrive	Yes
3	27	4	1,200	1,050	Oxygen dependent, failure to thrive, heart failure	Yes
4	28	16	770	1,800	Heart failure	Yes
5	32	4	1,400	1,200	Failure to thrive	Yes
6	28	10	1,200	1,100	Congenital rubella syndrome, ventilator dependent, bronchopulmonary dysplasia, ROP stage III	Yes
7	27	4	1,040	940	Heart failure, failure to thrive	Yes
8	30	4	930	930	Ventilator dependent	No*

\*Indomethacin or ibuprofen was not administered because of severe thrombocytopenia.

PDA = patent ductus arteriosus; ROP = retinopathy of prematurity.



**J Am Coll Cardiol Interv (2010); 3: 550 -5**

# Cierre de Ductus en niños pequeños

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## Outcomes of Transcatheter Occlusion of Patent Ductus Arteriosus in Infants Weighing $\leq 6$ kg

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**J Am Coll Cardio Inter (2010); 3: 1295-9**



# Cierre de Ductus en niños pequeños

**Results** A total of 62 patients underwent attempted closure. The mean age at catheterization was  $4.7 \pm 2.8$  months with a mean weight at catheterization of  $4.6 \pm 0.9$  kg. Successful device placement was achieved in 58 of 62 patients (94%). Among those receiving a device, complete occlusion was noted in all 58 patients at either catheterization or last available follow-up.

**J Am Coll Cardiovas Interv (2010); 3: 1295-9**



# Cierre de Ductus en niños pequeños

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## Safety of Transcatheter Patent Ductus Arteriosus Closure in Small Weight Infants

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**J Interv Cardiol (2012); 25 : 391-399**



# Cierre de Ductus en niños pequeños

TABLE 1. Features Data

PT No.	Age (mo.)	Sex	Weight (kg)	QP:QS	Mean PAP (mmHg)	Angiographic PDA minimal diameter (mm)	PDA type	ADO size (mm)	PT (min)	FT (min)	Immediate Result	6 Months Result	12 Months Result
1	8	F	8	1.5	34	4.8	C	6 × 4	113	17	C	C	C
2	12	F	8	2	14	4.5	A	6 × 4	115	17	C	C	C
3	12	F	4.3	3.2	28	7	A	8 × 6	115	28.6	C	C	C
4	15	F	5.3	2.2	NA	4.6	C	6 × 4	130	23	C	C	NA
5	11	F	5.4	2.3	22	7.6	A	8 × 6	103	13.3	TS	TS	NA
6	7	F	5.7	3.5	26	NA	A	8 × 6	140	25	C	C	C
7	14	M	7.5	1.7	36	2.6	A	6 × 4	128	19.25	C	C	C
8	7	F	6.9	1.9	37	4.7	A	6 × 4	94	10.2	TS	TS	TS
9	13	M	7.5	1.75	23	2.5	A	6 × 4	90	16.5	C	C	C
10	11	F	7.1	NA	26	2.6	A	6 × 4	166	29	C	C	C
11	7	F	6.7	2.06	59	6.6	A	8 × 6	165	24	C	C	C
12	9	F	7.8	1.8	28	3.8	A	6 × 4	195	27.3	TS	TS	C
13	6	F	5.2	1.8	NA	NA	A	6 × 4	125	23.2	TS	TS	C
14	26	F	8	3.7	40	9	C	10 × 8	110	17.8	TS	C	C
15	11	F	7.5	2	28	5.7	C	10 × 8	115	13	C	C	-
16	6	F	5	NA	8	3	A	6 × 4	100	15.3	TS	C	-
17	7	M	7	1.5	15	3.7	A	8 × 6	80	12	TS	C	-
18	18	M	7	1.9	13	3	A	6 × 4	95	17.5	C	C	-
19	8	M	7	1.9	14	3	A	6 × 4	90	15	C	C	C
20	4	F	4.5	2	31	4	A	6 × 4	120	22	C	C	C
21	15	F	8	2.3	29	4.5	A	8 × 6	78	11.4	C	C	C
22	6	F	5	2.1	56	6	C	8 × 6	82	19	C	C	C

J Interv Cardio (2012) ; 25: 391-399



# Cierre de Ductus en niños pequeños

Pediatr Cardiol (2013) 34:1661–1667

DOI 10.1007/s00246-013-0700-x

ORIGINAL ARTICLE

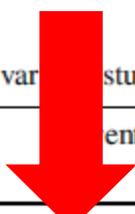
## **Percutaneous Closure of a Moderate to Large Tubular or Elongated Patent Ductus Arteriosus in Children Younger Than 3 Years: Is the ADO II Appropriate?**

**Saktheeswaran Mahesh Kumar · Venkateshwaran Subramanian ·  
Sasidharan Bijulal · Kavassery Mahadevan Krishnamoorthy ·  
Sivasubramonian Sivasankaran · Jaganmohan A. Tharakan**

Received: 20 February 2013 / Accepted: 29 March 2013 / Published online: 17 April 2013



# Cierre de Ductus en niños pequeños



**Table 3** Comparison of results of various studies on the efficacy and safety of Amplatzer duct occluder (ADO) II devices

Variable	Present study	Thanopoulos et al. (2008) [16]	Thanopoulos et al. (2010) [17]	Forsey et al. (2009) [7]
Study population	16	25	65	27
Inclusion criteria	Not suitable for ADO I	Consecutive	Consecutive	Consecutive
Mean age (months)	10.3	38	42	16
Mean weight (kg)	6	10.5	10.5	9.4
Mean PDA diameter (mm)	3.8	3.6	3.6	2.7
Mean PDA length (mm)	5.3	NA	NA	12.6
Mean device diameter (mm)	5.06	4.3	4.2	4.8
Immediate residual flow (%)	37	16	5	4
Late residual flow (%)	25	4	4	Nil
PA obstruction (%)	12.5	8	4.7	4
DTA obstruction (%)	6.25	Nil	Nil	Nil
Device embolism	1/16	1/25	1/65	1/27
Mean follow-up (months)	16	1	1	Nil

*PDA* patent ductus arteriosus, *NA* not available, *PA* pulmonary artery, *DTA* descending thoracic aorta



# Cierre de Ductus en Prematuros

Pediatr Cardiol (2013) 34:88–94

DOI 10.1007/s00246-012-0393-6

ORIGINAL ARTICLE

## Comparison of the Efficacy of Different-Sized Amplatzer Duct Occluders (I, II, and II AS) in Children Weighing Less Than 10 kg

Osman Baspinar · Ahmet Irdem · Ercan Sivasli ·  
Derya Aydin Sahin · Metin Kiline

Received: 8 April 2012 / Accepted: 9 May 2012 / Published online: 31 May 2012



# Cierre de Ductus en niños pequeños

Pediatr Cardiol (2013) 34:88–94

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**Table 1** Characteristics of patients using different versions of the Amplatzer ductal occluders

Patient characteristics	ADO I	ADO II	ADO II AS	<i>p</i>
No. of patients (%)	26 (33.8)	43 (55.8)	8 (10.4)	
Sex (female/male)	22/4	26/17	6/2	
Mean (range) age	1.07 ± 0.48 (4 months–2 years)	0.66 ± 0.31 (1 month–1.33 year)	0.28 ± 0.17 (17 days–7 months)	0.001*
Mean (range) weight (kg)	7.86 ± 1.45 (4.9–9.9)	6.50 ± 1.85 (2.0–9.4)	4.36 ± 2.49 (1.2–9.5)	0.001*
Narrowest diameter of the ductus (mm)	3.11 ± 0.96 (1.6–5.9)	2.25 ± 1.06 (1.0–4.9)	2.33 ± 1.01 (1.4–4.0)	0.003*
Type of ductus	Type A ( <i>n</i> = 25) Type B ( <i>n</i> = 1)	Type A ( <i>n</i> = 32) Type B ( <i>n</i> = 2) Type C ( <i>n</i> = 6) Type D ( <i>n</i> = 2) Type E ( <i>n</i> = 1)	Type A ( <i>n</i> = 3) Type C ( <i>n</i> = 4) Type D ( <i>n</i> = 1)	
Mean (range) PAP (mm Hg)	30.5 ± 12.3 (17–69)	26.4 ± 13.3 (11–58)	34.6 ± 22.1 (11–71)	0.144

\* Statistically significant

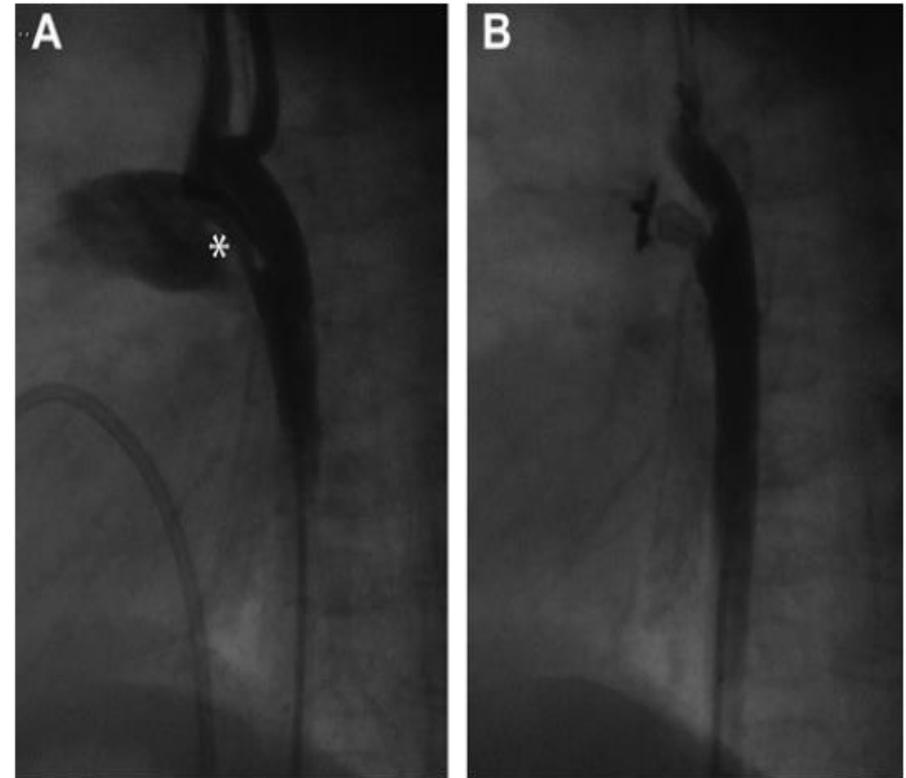


# Cierre de Ductus en Prematuros

## Closure of a large ductus arteriosus in a preterm infant using the ADO II AS device

Current catheter technology is not designed for closure of large patent ductus arteriosus (PDA) in low-weight infants. Percutaneous coil occlusion of PDA was previously attempted in a sick premature baby with multiple malformations.<sup>1</sup> The new miniaturised device, ADO II AS (Amplatzer Duct Occluder II Additional Size), might avoid the risk of surgical closure of PDA in preterm babies.<sup>2</sup>

A male child was born with a weight of 1050 g; he had a large PDA resistant to ibuprofen. The baby was eventually weaned from mechanical ventilation but developed severe congestive heart failure. At age 2 months, his weight was 2010 g. Echocar-



# Cierre de Ductus en niños pequeños

Catheterization and Cardiovascular Interventions 82:245–252 (2013)

## PEDIATRIC AND CONGENITAL HEART DISEASE

### Original Studies

### Closure of Patent Ductus Arteriosus in Children, Small Infants, and Premature Babies with Amplatzer Duct Occluder II Additional Sizes: Multicenter Study

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Nazan Ozbarlas,<sup>3</sup> MD, and Osman Baspinar,<sup>4</sup> MD



# Cierre de Ductus en niños pequeños

**Objectives:** To evaluate safety and efficacy of closure of patent ductus arteriosus (PDA) with Amplatzer duct occluder II Additional Sizes (ADO II AS) and to report early and midterm results of the device in children and very young symptomatic infants.

**Methods:** Retrospective analysis of angiographic data of 60 children from four pediatric cardiology centers. **Results:** The median patient age and weight were 6.5 (0.5–168) months and 6.8 (1.19–57) kg, respectively.

In the study, 26 children had a body weight of  $\leq 6$  kg. Of these 26 children, 9 had a body weight of  $\leq 3$  kg. The median narrowest diameter of PDA was 2 (1.2–4) mm. Ductal anatomy was Type A in 29, Type B in 2, Type C in 11, Type D in 1, and Type E in 16 patients, and a residual PDA after surgery in 1 patient. Closure with ADO II AS was achieved in 58 (96.6%) of 60 attempted cases. In two infants, the device was not released because of significant residual shunt. ADO II was used in one, and the other was sent to surgery. Complete closure was observed in all ADO II AS deployed children by the next day on echocardiography. Median follow-up was 12 (1–18) months. Neither death nor any major complications occurred. **Conclusions:** Our study shows that closure of medium and small sized PDA by using ADO II AS device is effective and safe in children. The use of the device will expand the field of application of PDA closure in small infants. © 2013 Wiley Periodicals, Inc.

# Cierre de Ductus en niños pequeños

Pt. No	Sex	Age (Mo)	Weight (kg)	PDA type	Ductal measurements (mm)			Aortic diameter opposite PDA (mm)	Device size W × L (mm)	Occlusion at angiography	Closure side	FU (Mo)
					Min	L	A					
1	F	3.5	4.4	E	3.2	5	7	5.3	5 × 4 <sup>a</sup>	Complete	Venous	12
2	F	7	4	A	1.5	4.1	3.9	4.6	3 × 2 <sup>b</sup>	Complete	Arterial	18
3	F	3	4.1	C	4	4	4.3	5.57	5 × 2 <sup>b</sup>	Complete	Arterial	12
4	F	2	4.4	A	1.6	4.2	2.3	5.08	3 × 2 <sup>b</sup>	Complete	Venous	12
5	F	4	4.4	A	1.45	3.65	1.67	4.25	4 × 2 <sup>a</sup>	Complete	Venous	12
6	F	4	5.3	C	3.8	4.3	5.8	4.7	ADO II	Complete	Arterial	-
7	F	1.5	1.9	C	2.2	4.1	4.7	4.2	4 × 2 <sup>b</sup>	Complete	Venous	12
8	M	0.5	1.19	C	2.35	4.3	NS	3.69	4 × 2 <sup>a</sup>	Minimal	Venous	6
9	F	4	4.2	C	2.5	12.45	6.54	6.81	5 × 4 <sup>b</sup>	Complete	Venous	6
10	F	1	3.2	A	1.4	4.36	6.4	3.87	4 × 2 <sup>a</sup>	Complete	Venous	6
11	F	3	2.39	A	2.3	5	NS	5.68	3 × 4 <sup>b</sup>	Complete	Venous	6
12	M	0.75	1.5	C	3	5.8	NS	3.2	5 × 6 <sup>b</sup>	Complete	Venous	6
13	M	1	1.6	C	2.35	7.28	NS	4.17	4 × 6 <sup>b</sup>	Complete	Venous	6
14	F	3.5	5.1	A	1.8	4.8	6.68	6.1	4 × 4 <sup>a</sup>	Complete	Venous	18
15	F	1.5	1.7	E	1.5	10	6	6	4 × 6 <sup>b</sup>	Complete	Venous	18
16	F	7	5.5	A	1.66	4.73	6.8	6.9	3 × 4 <sup>b</sup>	Complete	Venous	12
17	F	2	2.9	E	2.97	7.54	4.98	5.8	4 × 6 <sup>b</sup>	Minimal	Venous	6
18	F	2.5	4.5	B	2.68	4.41	5.62	5.9	5 × 2	Complete	Venous	6
19	F	5.5	5.5	E	1.3	7.22	5.47	6.6	3 × 4 <sup>b</sup>	Complete	Venous	6
20	F	3.5	3	A	2.28	4.78	5.1	6.9	3 × 4 <sup>b</sup>	Moderate	Venous	6
21	F	1.5	4.3	A	1.99	12.99	6.56	5.8	4 × 6 <sup>b</sup>	Complete	Arterial	6
22	M	2.5	4.5	A	1.6	5.5	7.2	6.3	3 × 4 <sup>a</sup>	Complete	Arterial	6
23	F	3	3.6	E	1.5	7	3.5	5.4	3 × 6 <sup>a</sup>	Complete	Venous	12
24	F	2	2.2	C	3	5.5	5	5.1	5 × 4	Surgery	Venous	-
25	F	4	5.5	A	2	5	6	5.9	4 × 6 <sup>a</sup>	Complete	Arterial	3
26	F	8	6	A	3.1	9.7	6.2	6.9	5 × 4 <sup>b</sup>	Complete	Arterial	1

Catheter Cardiovas Interven (2013) 82: 245-252



# Cierre de Ductus en niños pequeños

## Original article

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Korean J Pediatr

## Transcatheter closure of small ductus arteriosus with amplatzer vascular plug

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# Cierre de Ductus en niños pequeños

**Table 1.** Clinical characteristics of the patients (n=20)

Characteristic	Value
Age (mo)	54.9±45.7 (9–199)
Gender (male/female)	8 (40)/12 (60)
Body weight (kg)	18.7±11.3 (9–60)
Murmur (+)	9 (45)
PDA type	
C	5 (25)
D	12 (60)
E	3 (15)
PDA diameter (mm)	
Pulmonary end	1.7±0.6 (1.0–3.2)
Middle	2.3±0.9 (0.9–4.3)
Aortic end	3.6±1.4 (1.2–6.0)
PDA length (mm)	7.3±1.8 (4.3–12.0)
AVP/PDA size ratio	
AVP/pulmonary end	3.4±1.6 (1.7–8.0)
AVP/middle of PDA	2.8±1.6 (1.3–7.3)
AVP/Aortic end	1.7±1.0 (0.7–5.0)

Values are presented as mean±standard deviation (range) or number (%). PDA, patent ductus arteriosus; AVP, Amplatzer vascular plug.

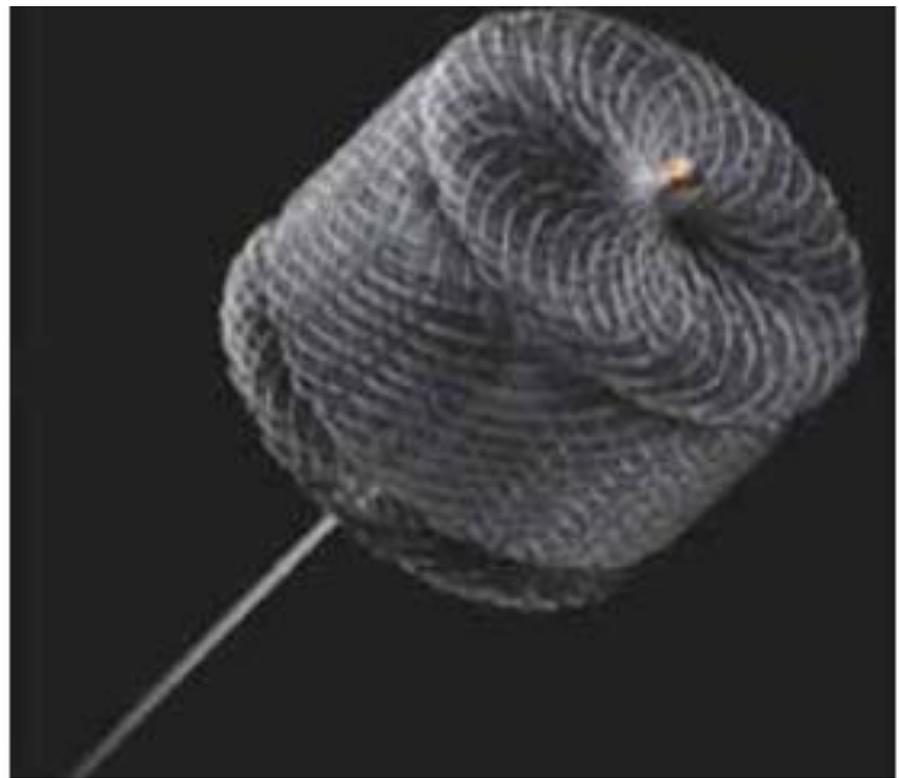


# C O N G E N I T A L C A R D I O L O G Y T O D A Y

## Trans-catheter Closure of Patent Ductus Arteriosus (PDA) in Extremely Low Birth Weight (ELBW) Premature Infants: A New Treatment Option for an At-Risk Population

*By Evan M. Zahn, MD; Ruchira Garg, MD;  
Alistair Phillips, MD*





**Table 1. Demographic Data**

<b>Patient</b>	<b>Birth Weight (gm)</b>	<b>Gestational age (weeks+days)</b>	<b>Sex</b>	<b>Procedure Weight (gm)</b>	<b>Procedure Age (days)</b>	<b>Ventilator Dependence</b>	<b>Inotrope Dependence</b>
1	2480	31+6	Female	2240	18	yes	yes
2	440	26+4	Male	1610	80	yes	no
3	1050	26+3	Male	1140	16	yes	no
4	1077	26+3	Male	1220	20	yes	no
5	856	26+3	Female	960	21	no	no
6	675	29+0	Female	870	30	yes	no
7	900	28+3	Male	1155	22	no	no
8	610	27+0	Female	1655	78	yes	no
9	1000	26+2	Female	1400	30	no	no



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**Background:** Transcatheter closure of a patent ductus arteriosus (PDA) has always been considered risky for infants weighing <6 kg and preterms. We present our findings regarding transcatheter closures of PDA.

**Methods:** The inclusion criteria were a weight of <6 kg and the presence of PDA symptoms. The study subjects were divided into two groups: <6 kg and premature infants.

**Results:** A total of 69 infants were included. The mean ages and weights of the <6 kg and the preterms were  $5.4 \pm 2.7$  months and  $30.3 \pm 19.9$  days, and  $4.6 \pm 0.8$  and  $1.7 \pm 0.3$  kg, respectively. Type C PDAs were most frequently observed in the premature group, and type A was in <6 kg. Sixteen of the patients were premature infants, and 81.2% of them had an extremely low birth weight. All of the premature infants had comorbidities, and had been receiving respiratory support therapy. Transcatheter closure was successfully completed in 81.2% of the premature infants and 94.3% of the <6-kg infants. Major complications occurred in 4 patients (one death and three device embolizations). The patient's age was found to be the main risk factor. The most frequently used device was the Amplatzer duct occluder II in additional sizes (84.6%) in the preterms and the Amplatzer duct occluder I (34%) and II (34%) in the <6-kg group.

**Conclusion:** The transcatheter closure of PDA is relatively safe and effective in preterms and in infants <6 kg. The selection of a suitable device based on the type of PDA is critical to the success of the procedure. (J Intervent Cardiol 2015;28:180–189)



**Table 1.** The Demographic Characteristics of the Patients

	Totally	Group <6-kg	Group Premature
Numbers (female, male)	69 (51/18)	53 (41/12)	16 (10/6)
Age	4.3 ± 3.0 months (11 days–15 months)	5.4 ± 2.7 months (0.99–5.9 months)	30.3 ± 19.9 days (11–90 days)
Weight (kg)	3.9 ± 1.4 (1.1–5.9)	4.6 ± 0.8 (2.7–5.9)	1.7 ± 0.3 (1.1–2.5)
PDA diameter (mm)	2.9 ± 1.4 (1–7.7)	2.9 ± 1.5 (1.1–7.7)	2.7 ± 0.7 (1–4)
Krichenko classification	A 52.2% B 1.4% C 36.2% E 10.1%	A 64.1% B 1.8% C 22.6% E 11.3%	A 12.5% C 81.3% E 6.3%

PDA, patent ductus arteriosus.



**Table 4.** Features of Our Study and of Similar Studies on Premature Infants and Infants That Weigh  $\leq 6$  kg

Author	Patients	Number	Weight	Devices	Success
Our study	Infants $< 6$ kg	53	4.6 kg (2.7–5.9)	ADOs, Coil	94.3%
	Preterm infants	16	1.7 kg (1.1–2.5)	ADOs, Coil	81.2%
Zahn et al., 2015 <sup>12</sup>	Preterm infants	6	1.1 kg (0.8–2.2)	AVP II	100%
Bentham et al., 2011 <sup>3</sup>	Preterm infants	3	1.7 kg (1.4–2.1)	ADOs, Coil	100%
Dimas et al., 2010 <sup>5</sup>	Infants $\leq 6$ kg	62	4.6 kg (2.5–6)	ADOs, Coil	94%
Francis et al., 2010 <sup>20</sup>	Preterm infants	8	1.1 kg (0.9–1.8)	Coil	100%
Abadir et al., 2009 <sup>2</sup>	Infants $\leq 6$ kg	58	5.0 kg (3.4–6)	ADOs	89.7%
Lin et al., 2009 <sup>6</sup>	Infants $\leq 3$ months	20	4.2 kg (2.7–7.1)	ADOs	100%
Sivakumar et al., 2008 <sup>9</sup>	Infants $\leq 6$ kg	28	4.7 kg (3.8–6)	Coil, ADOs	92.8%
Roberts et al., 2007 <sup>8</sup>	Preterm infants	10	2.1 kg (1.6–2.6)	Coil, ADOs	90%

ADOs, Amplatzer ductal occluders of different varieties; AVP II, Amplatzer vascular plug II.



# Cierre de Ductus en niños pequeños

## ADO II Additional Sizes

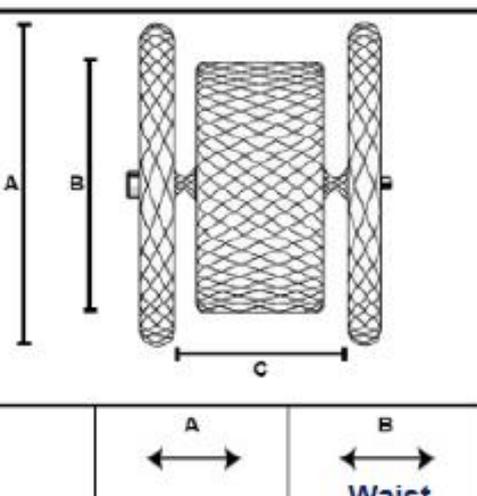
- Self-expanding, 144-wire, tightly-woven Nitinol (single-layer) to minimize residual shunt immediately after placement
- Central waist designed to fill the ductus and promote rapid occlusion
- Flat retention discs cover the pulmonary and aortic ends of the ductus to promote stability
- Symmetrical design to allow for venous or aortic deployment approach
- Radiopaque marker bands to permit visibility during fluoroscopy & echo
- Low-profile end screw to minimize protrusion into PA or AO



AMPLATZER® Duct Occluder II Additional Sizes  
© AGA Medical Corporation  
Device not available in the US



# Cierre de Ductus en niños pequeños



The diagram shows a cylindrical mesh device with two side handles. Dimension A is the total length, B is the length of the central mesh body, and C is the diameter of the mesh body.

REF	A mm (in)	B Waist mm (in)	C Length mm (in)
9-PDA2AS-03-02-L	4.00 (0.157)	3.00 (0.118)	2.00 (0.079)
9-PDA2AS-03-04-L	4.00 (0.157)	3.00 (0.118)	4.00 (0.157)
9-PDA2AS-03-06-L	4.00 (0.157)	3.00 (0.118)	6.00 (0.236)
9-PDA2AS-04-02-L	5.25 (0.207)	4.00 (0.157)	2.00 (0.079)
9-PDA2AS-04-04-L	5.25 (0.207)	4.00 (0.157)	4.00 (0.157)
9-PDA2AS-04-06-L	5.25 (0.207)	4.00 (0.157)	6.00 (0.236)
9-PDA2AS-05-02-L	6.50 (0.256)	5.00 (0.197)	2.00 (0.079)
9-PDA2AS-05-04-L	6.50 (0.256)	5.00 (0.197)	4.00 (0.157)
9-PDA2AS-05-06-L	6.50 (0.256)	5.00 (0.197)	6.00 (0.236)



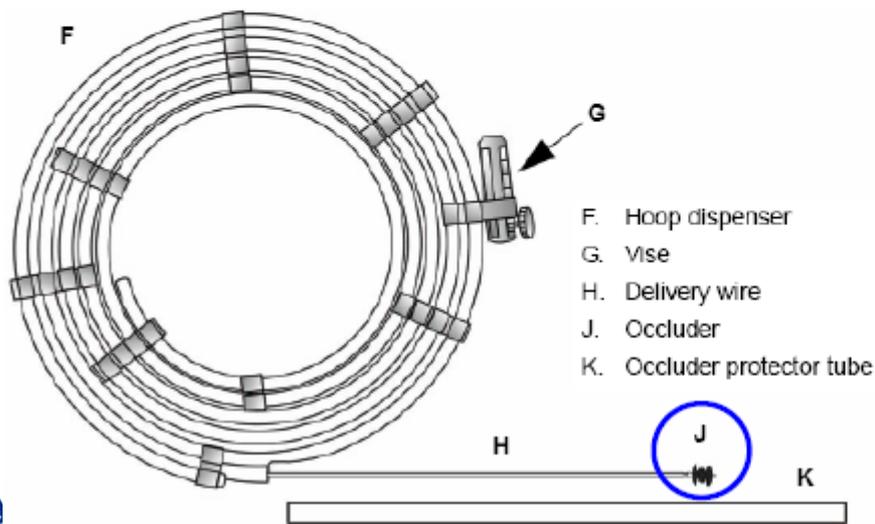
AMPLAZER® Duct Occluder II Additional Sizes  
© AGA Medical Corporation  
Device not available in the US

## Nine sizes:

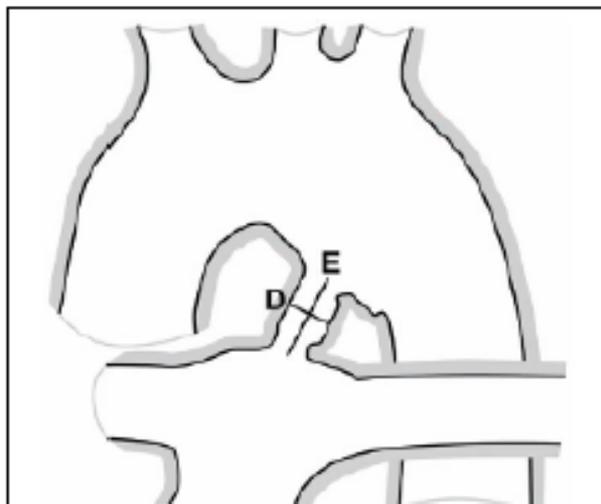
- 3 waist diameters: 3, 4, 5mm
- 3 waist lengths: 2, 4, 6mm
- Sizing is noted as:  
9-PDA2AS-waist mm-length mm-L

# Cierre de Ductus en niños pequeños

- The delivery cable comes packaged with the device pre-mounted on the cable (J)
- Extremely flexible distal tip to help visualize accurate proximal disc placement prior to release of the device



# Cierre de Ductus en niños pequeños

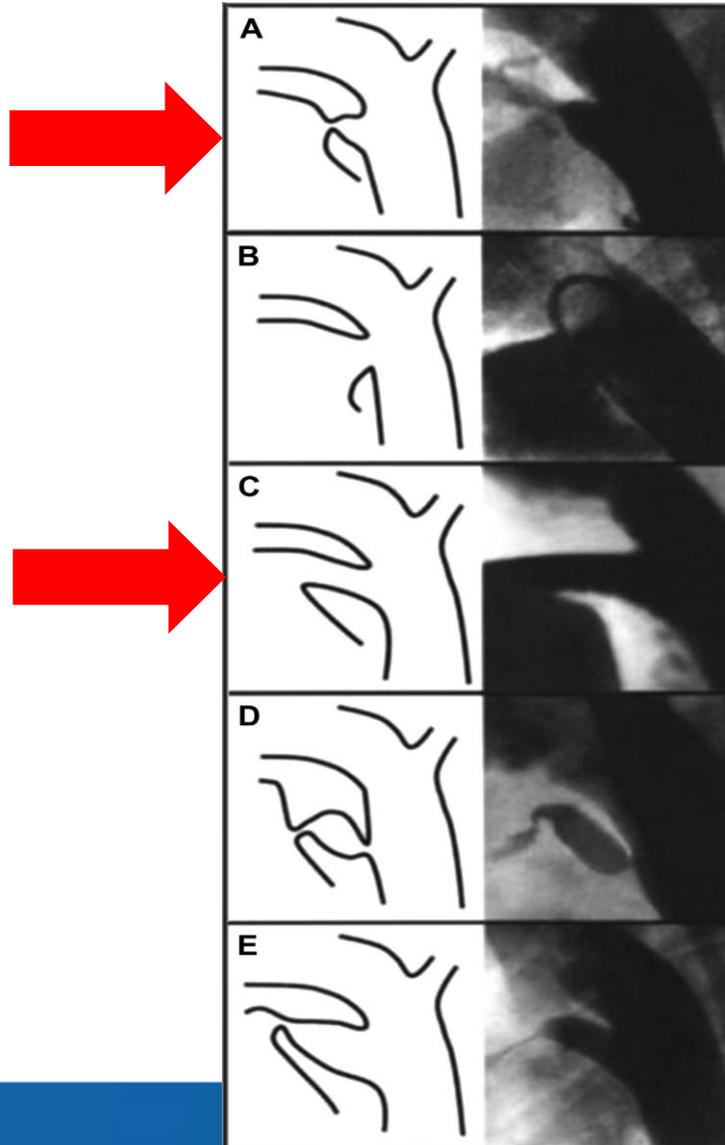


## Ductus Measurements

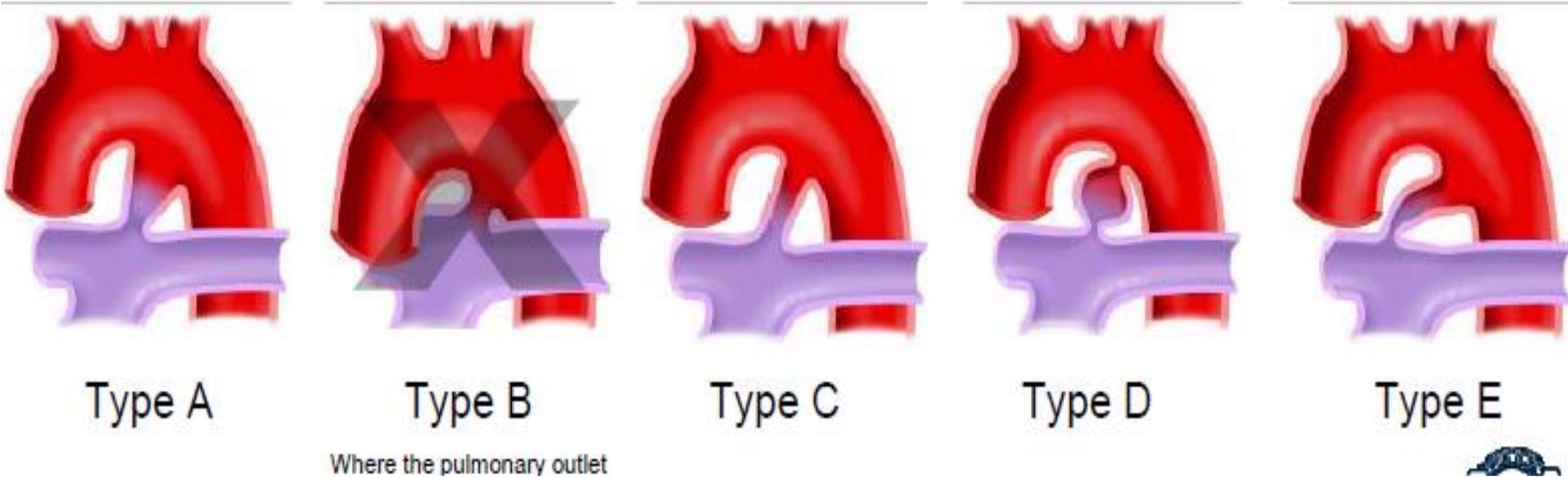
Diameter (D) mm	Length (E) mm		
	3-4mm	4.1-6mm	6.1-8mm
<2mm	03-02	03-04	03-06
2.1-3mm	04-02	04-04	04-06
3.1-4mm	05-02	05-04	05-06

Part number noted as: 9-PDA2AS-waist-length-L

# Cierre de Ductus en niños pequeños



# Cierre de Ductus en niños pequeños



# Cierre de Ductus en niños pequeños

- Dr. Neil Wilson
- Southampton, UK
- January 14, 2011
- Patient: 12 months, 11 kg, Male
- PDA size: 2.1 mm dia x 5 mm long
- Device: 4x4
- Occlusion noted by echo ~10 minutes post implant



# Cierre de DAP en niños pequeños con ADO II AS experiencia local ( CMI Cali – Colombia)

	N	H	M	Edad al cierre (días)	Peso al cierre ( gramos)	Edad Gestacion al (semanas)
Grupo A (2000-6000 gr)	8	5	3	123 (22 -390)	4.332 (3.000-6.000)	35.6 (26 -40)
<b>Grupo B (1000-2000 gr)</b>	<b>12</b>	<b>7</b>	<b>5</b>	<b>29</b> (6 -49)	<b>1439</b> ( 1.180-2.000)	<b>29</b> (25-37)
Total	20	12	8			



# Cierre de DAP en prematuro experiencia local

Condición Clínica	N	%
Falla cardiaca manifiesta	7	58.3
Cardiomegalia	12	100
Disfunción por ecocardiograma	12	100
DBP	7	58.3
Tratamiento con Ibuprofeno	8	66.7



# Cierre de DAP en el prematuro experiencia local

Tipo de Ductus	N	ADOIIAS 3-4	ADOIIAS 4-2	ADOIIAS 4-4	ADOIIAS 5-4
Ductus Tipo C	10		1	4	5
Ductus Tipo A	2	1		1	
Total	12	1	1	5	5



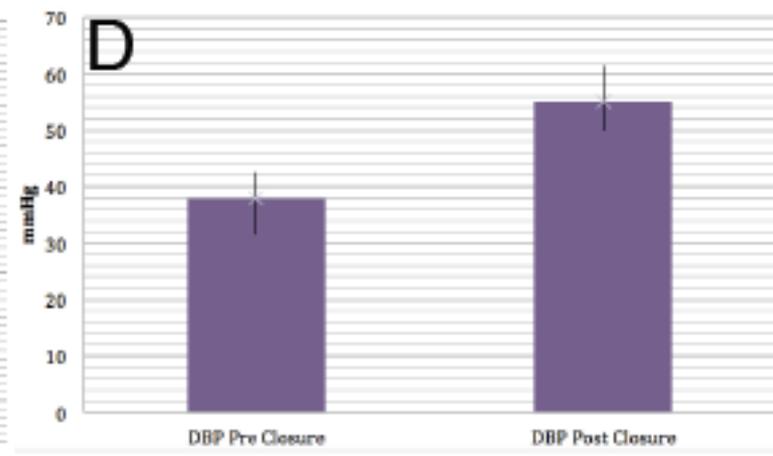
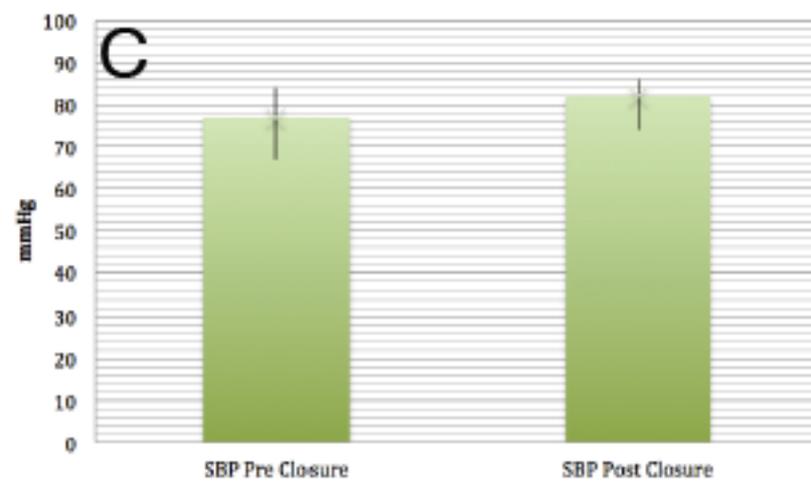
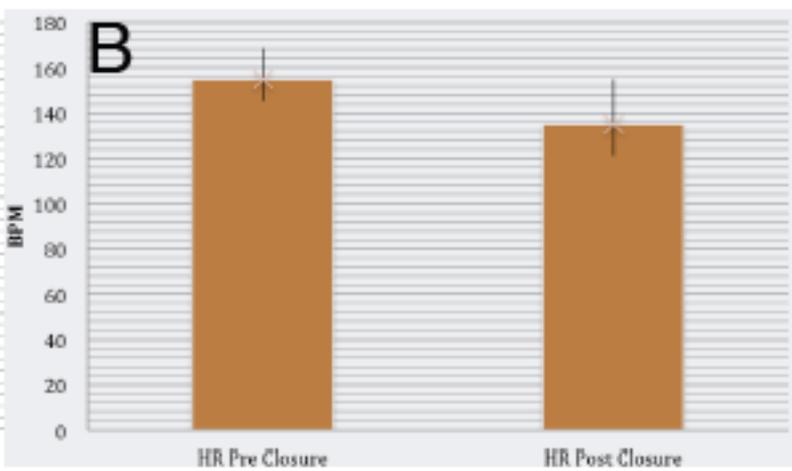
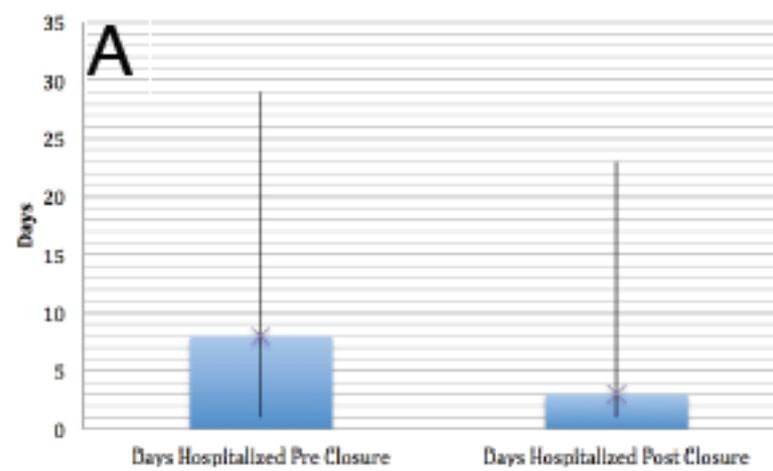
# Cierre de DAP en el prematuro experiencia local

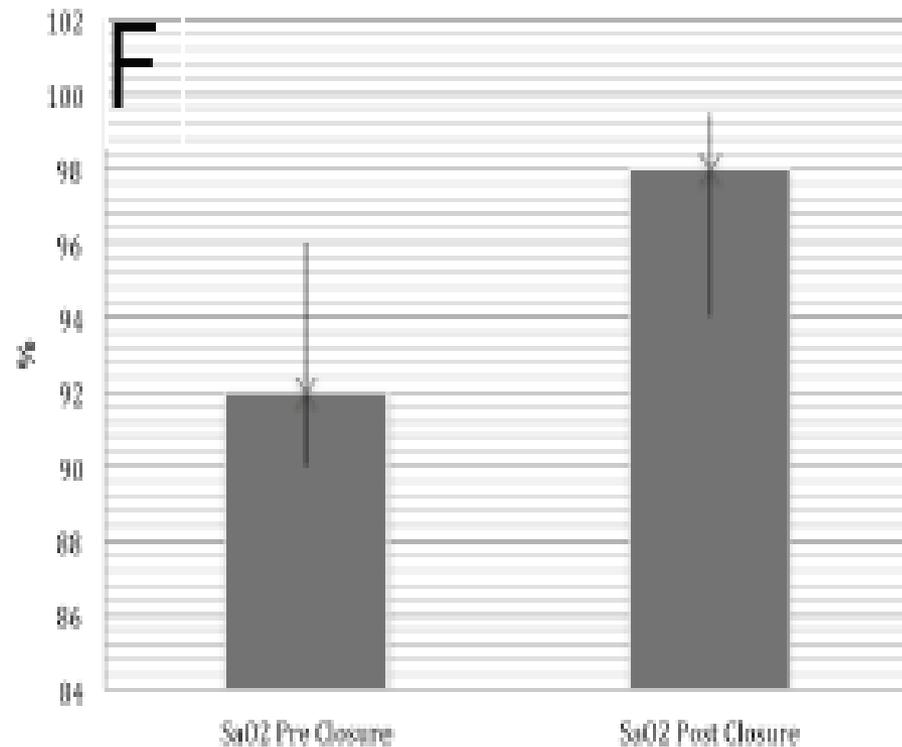
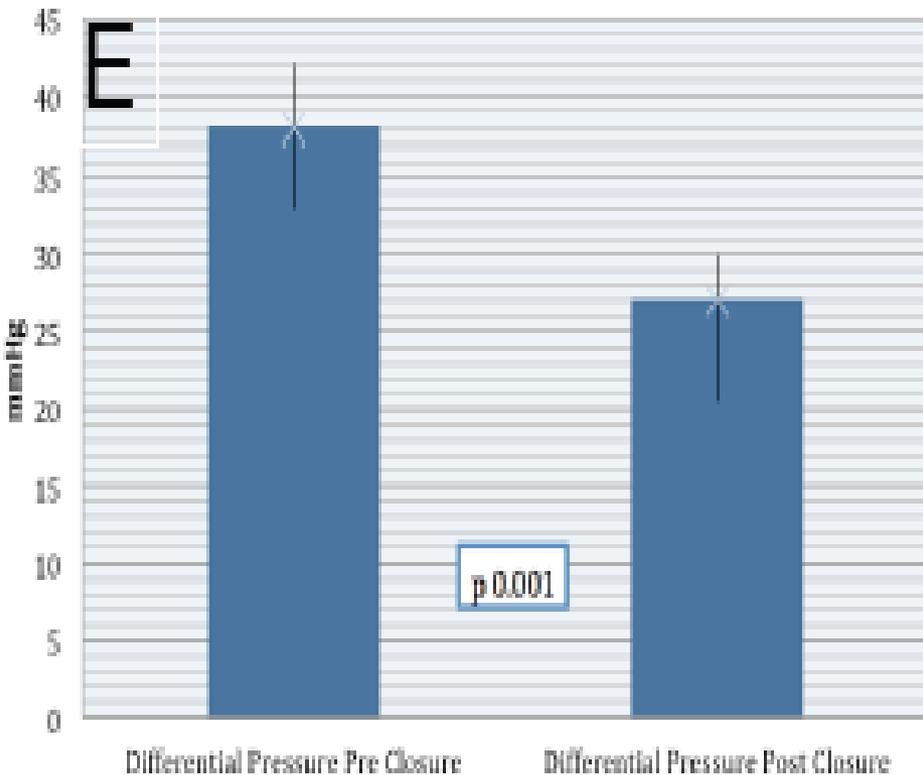
Características	n	%
Vena arteria	5	41,6
Arteria	2	16,7
Vena	5	41,6
Intubados	9	75
Transfusión	1	8.3
Ductus residual	1	8,3
Complicaciones o mortalidad	0	0



<b>Age</b>	37 days (17 – 89)
<b>Sex</b>	16 Male 13 Female
<b>Weight</b>	1550 g (820 – 4000)
<b>Type of PDA</b>	21 C 8 A1
<b>PDA Diameters</b>	Pulmonary 2.5 mm (2 – 3) Aortic 5 mm (4.7 – 6)
<b>PDA Length</b>	7 mm (7 – 8)
<b>LA/AO Ratio</b>	1.55 (1.5 – 1.6)
<b>Type of dispositive</b>	16 ADO II AS 4/4 13 ADO II AS 5/4
<b>Clinical and therapeutic considerations</b>	13 Pharmacological closure failure 16 Mechanical ventilation and inotropic support pre closure







# Cierre de DAP en el Prematuro experiencia local

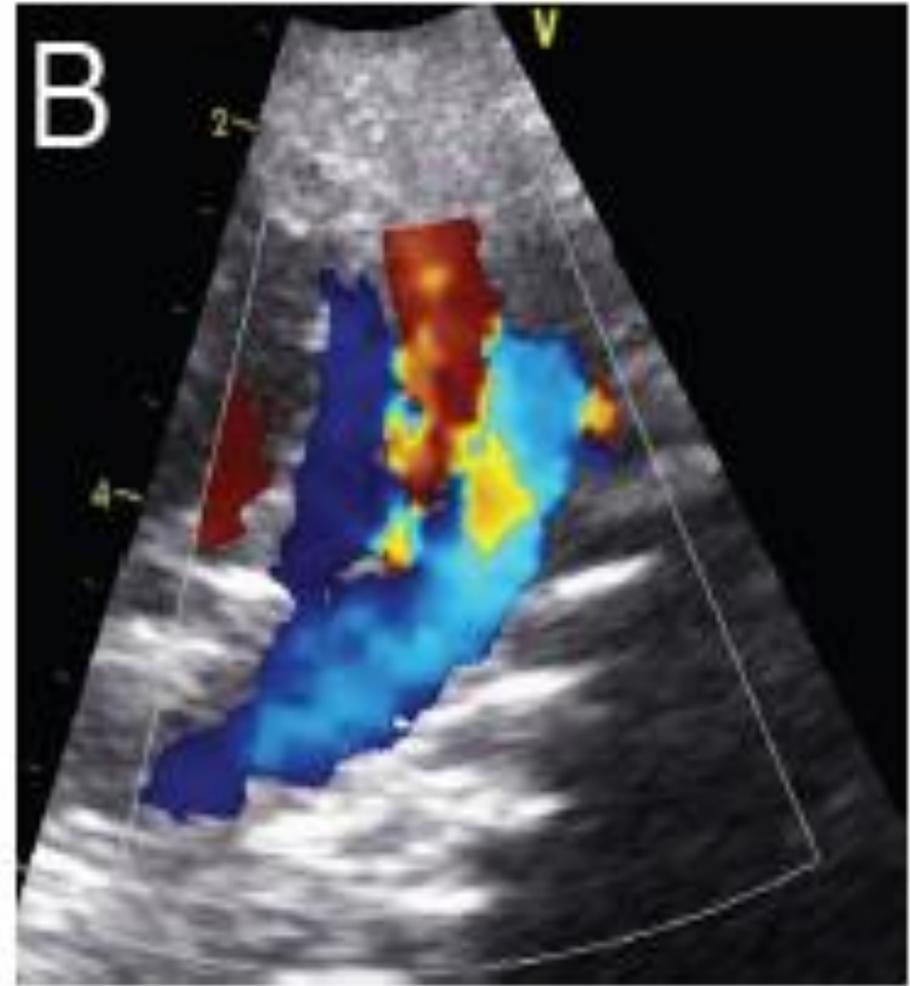
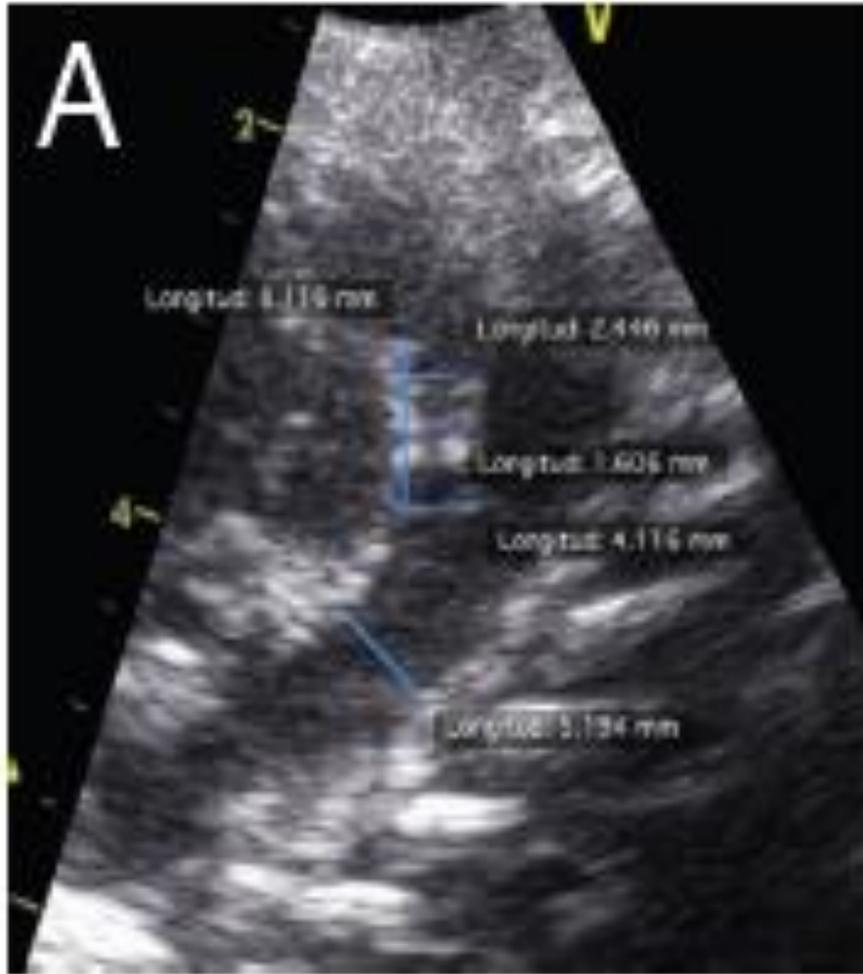


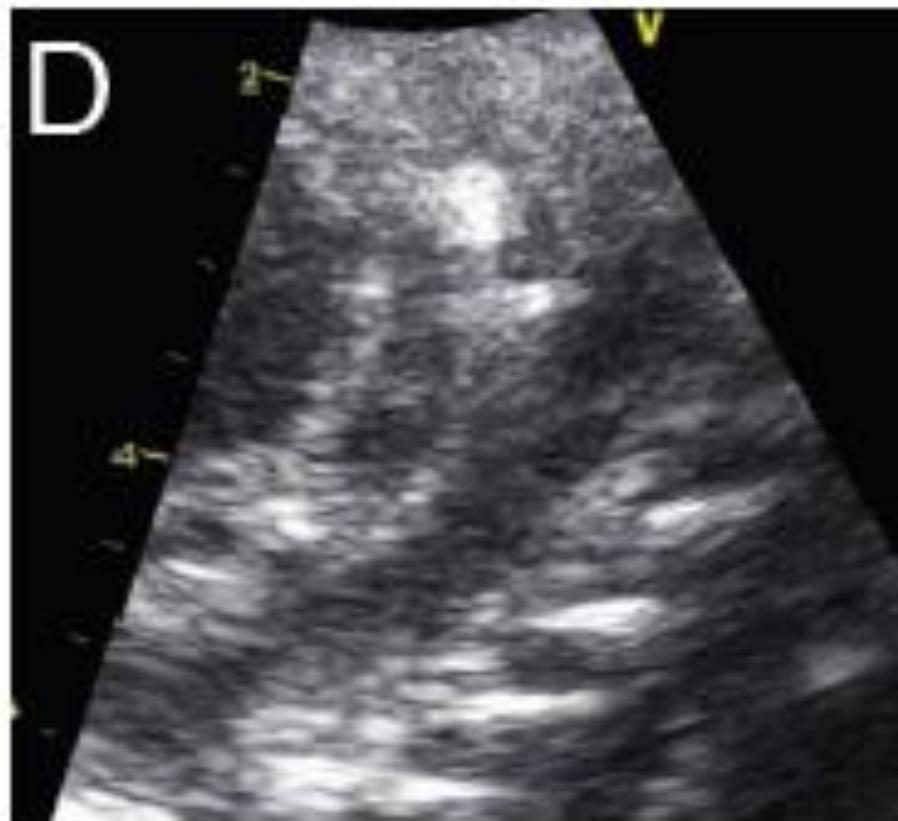
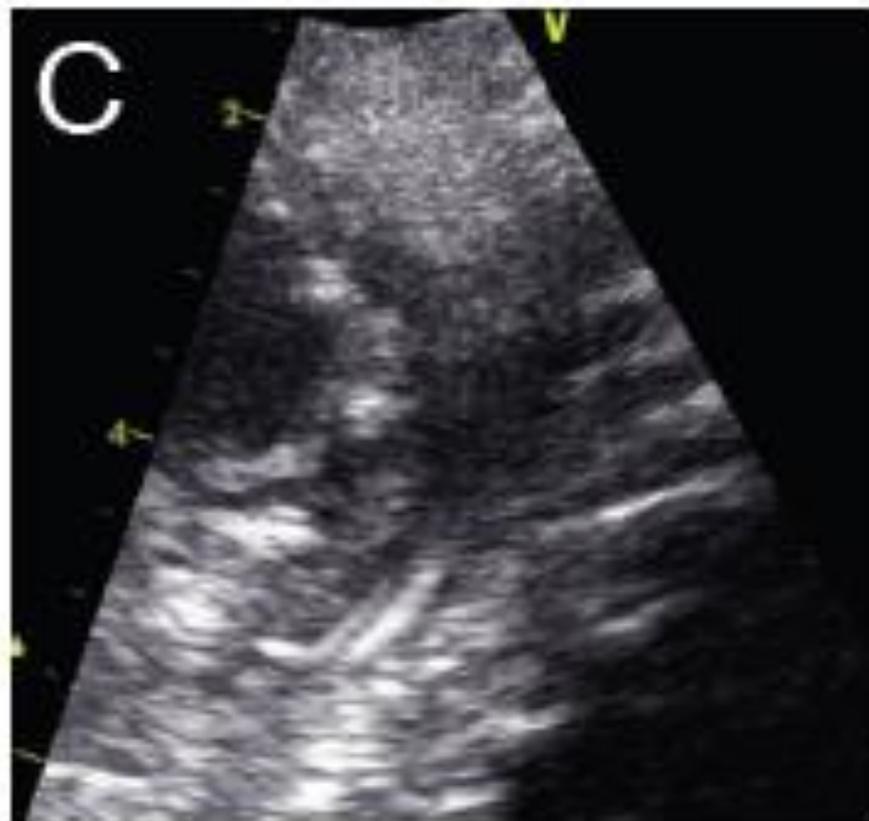
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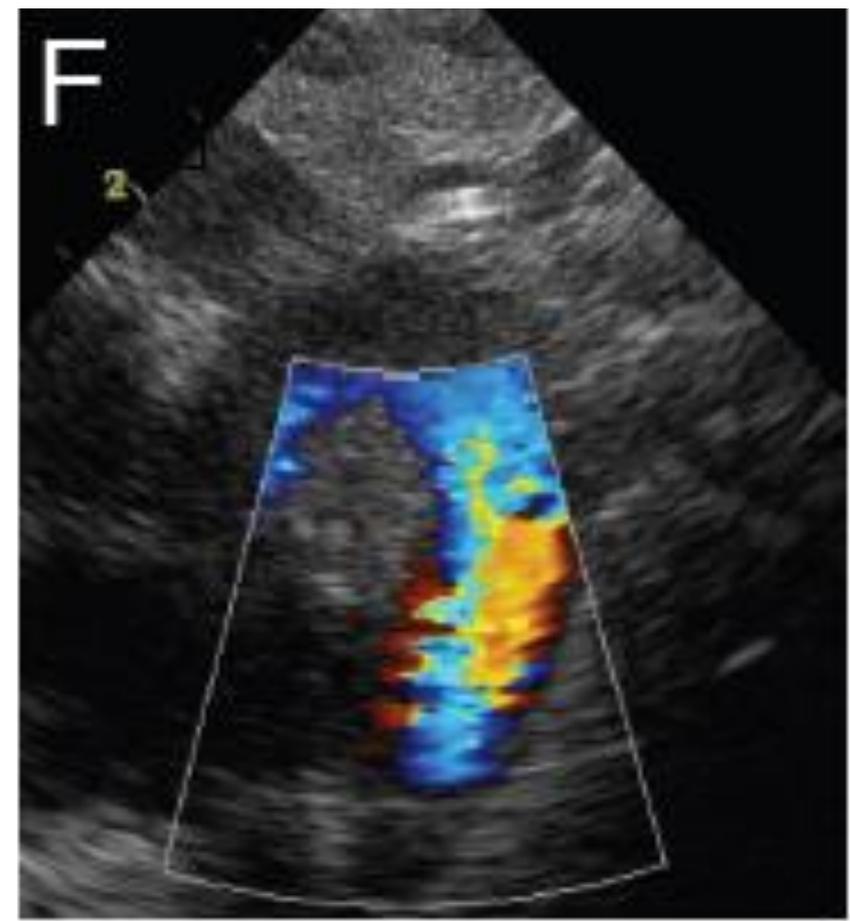
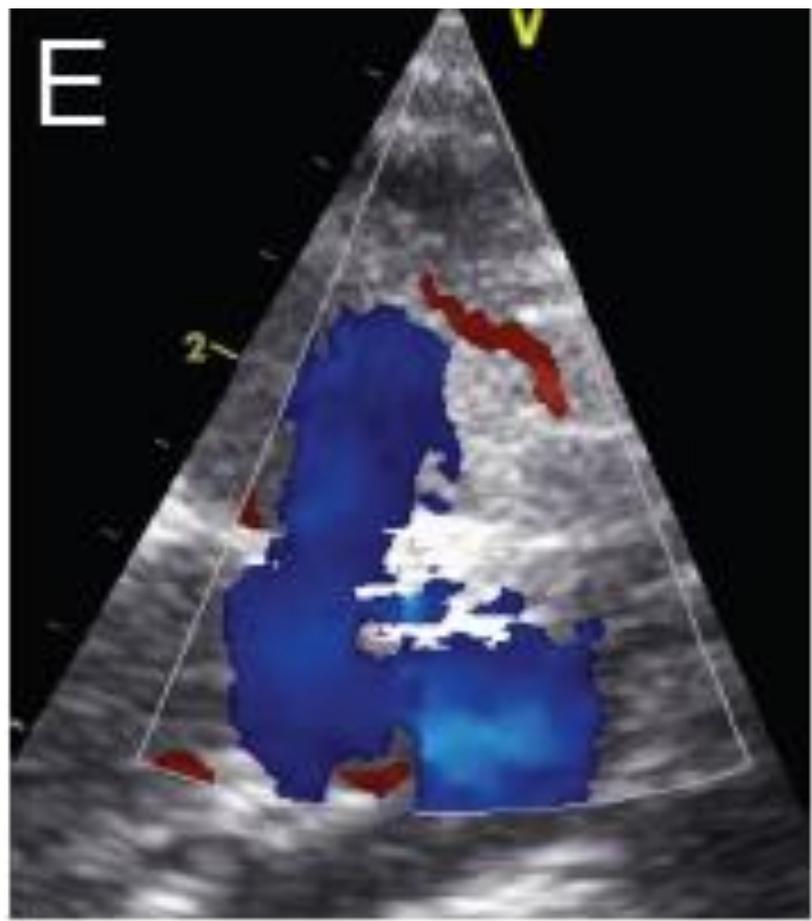


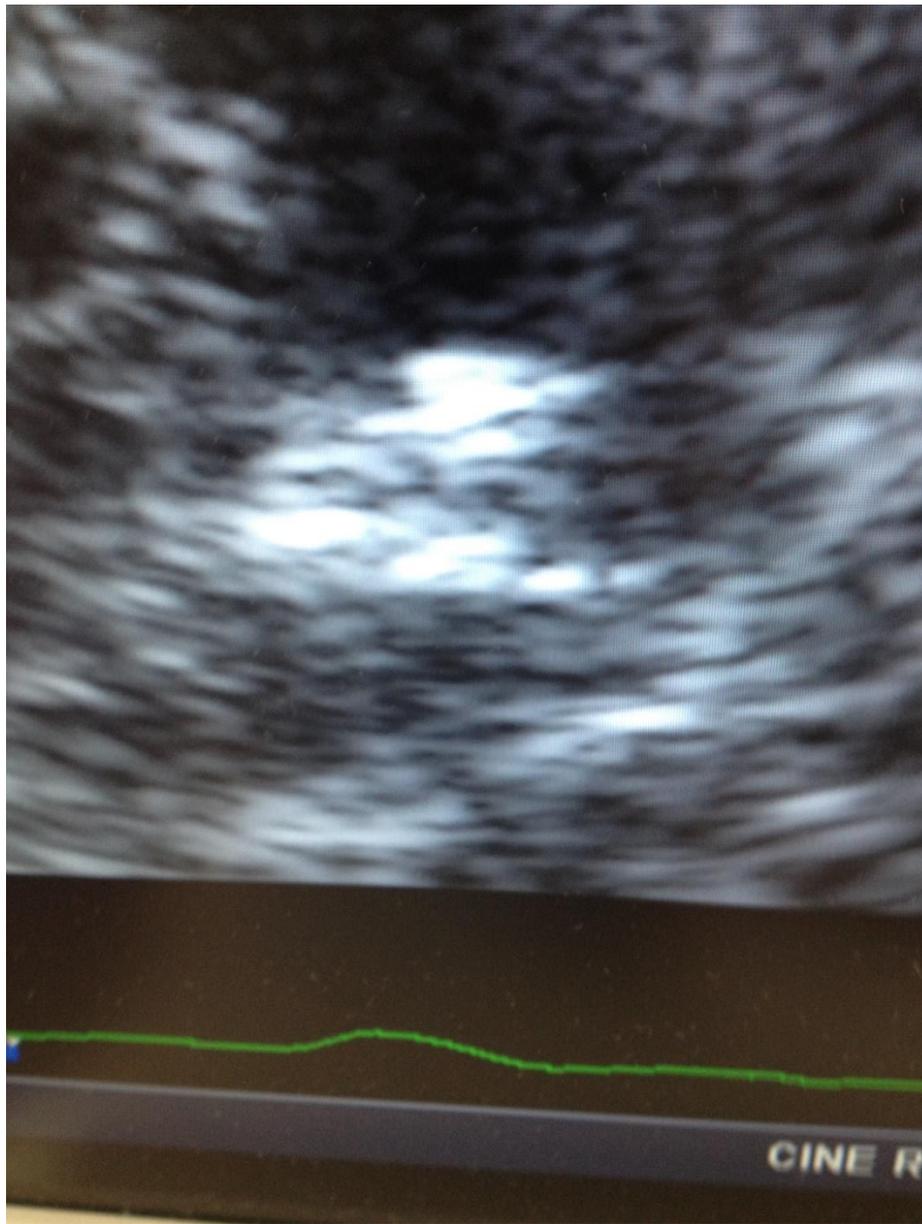
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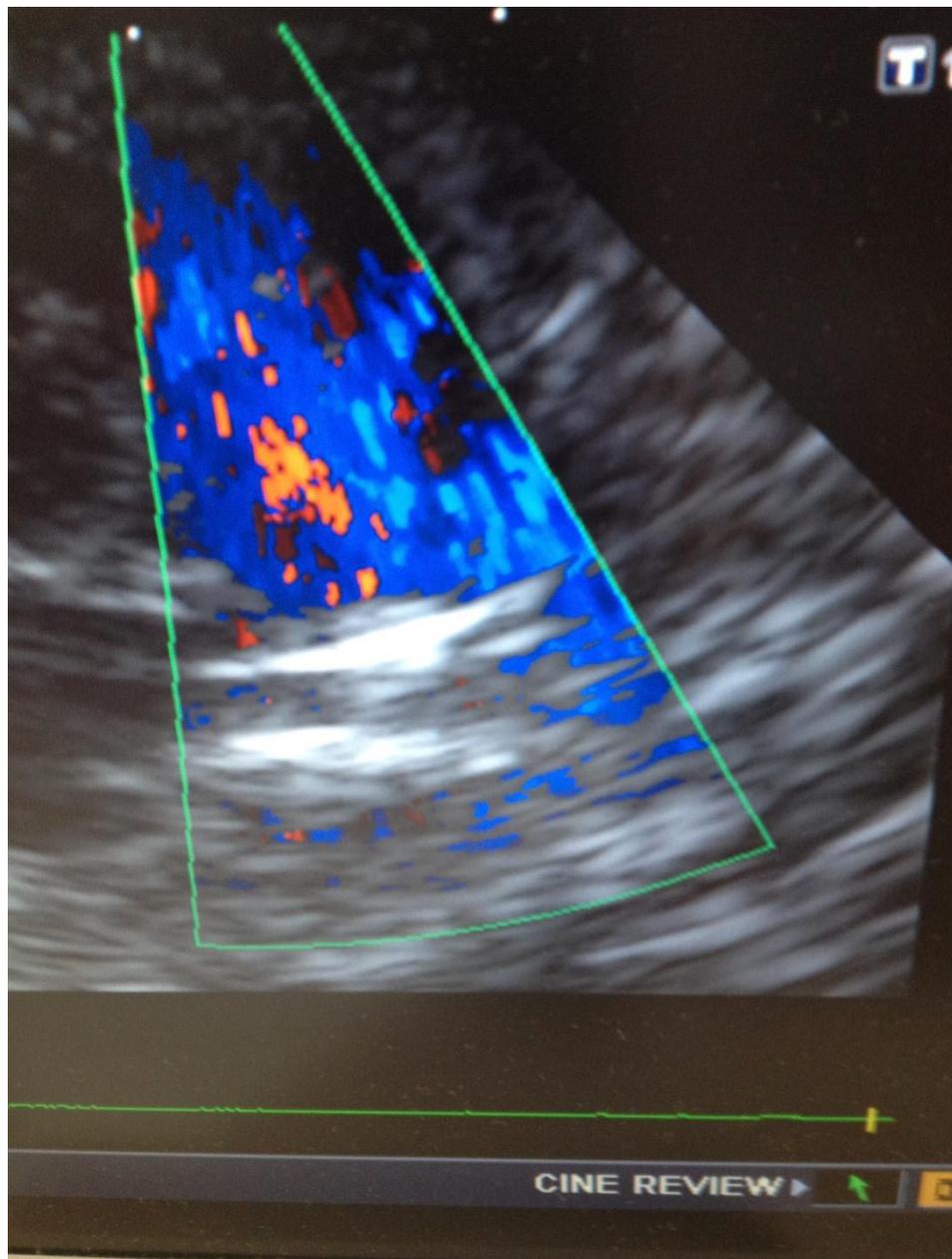








































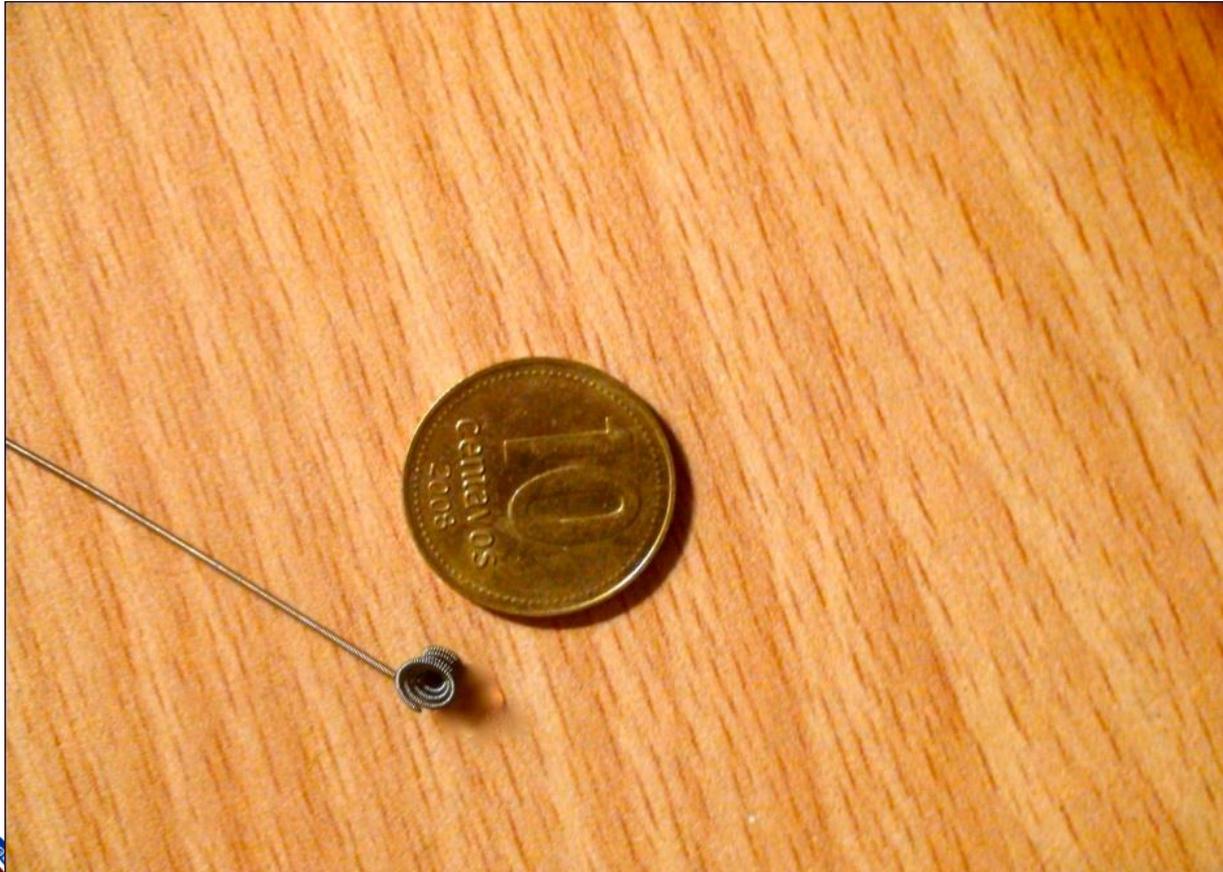








# Cierre de Ductus en Prematuros



# Cierre de DAP en Prematuros

Table 1. Comparison of outcome of patent ductus arteriosus ligation with and without prostaglandin synthetase inhibitor treatment.

	No PSI treatment (n = 19)	PSI treatment (n = 73)	p-value
Age at ligation, median (95% CI)	26.5 (12–94) days	34.5 (10–91) days	0.29**
Incidence of CLD	16 (84%)	63 (86%)	0.72*
Death	0	4 (5%)	0.57*

CLD = chronic lung disease; PSI = prostaglandin synthetase inhibitor

\*Fisher's exact test

\*\*Mann–Whitney U test

Cardiology in The Young (2013);23, 711-716



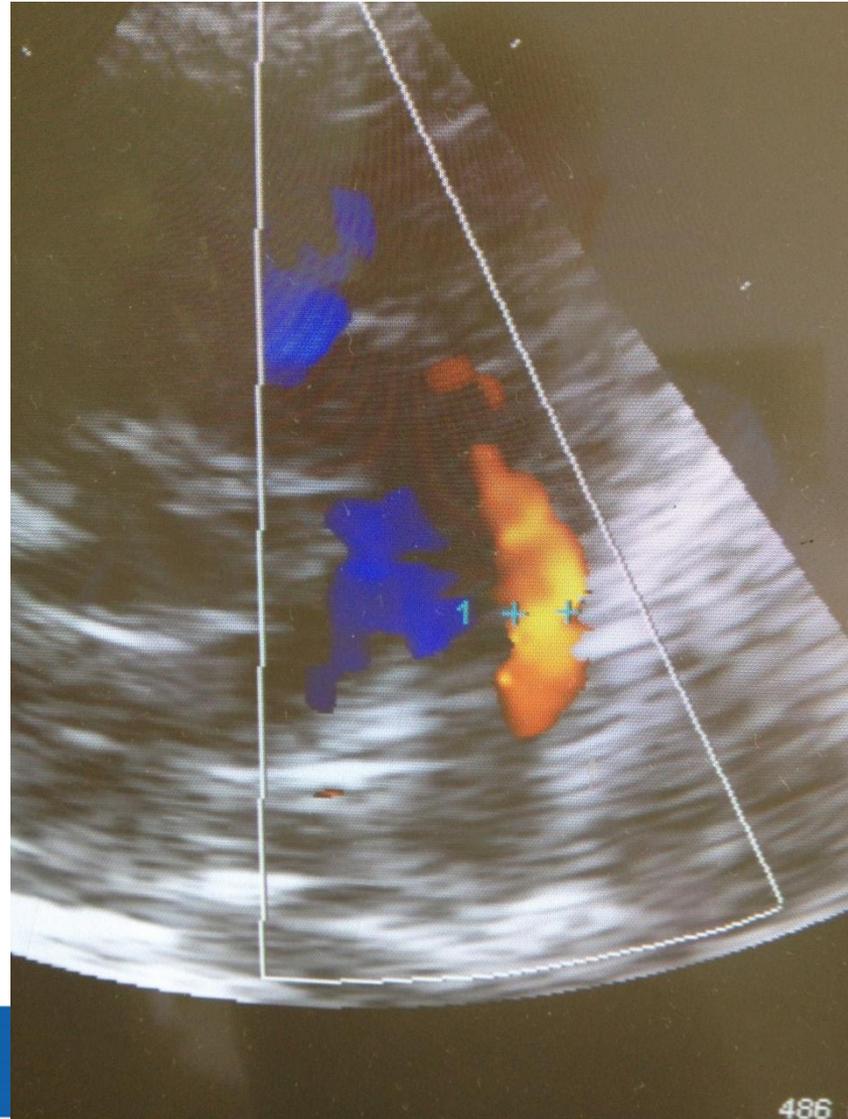
# Cierre de DAP en Prematuros

- 8 de 92 pacientes con complicaciones (8.7%)
- Neumotórax 5 pacientes
- Parálisis del laríngeo recurrente 2 pacientes
- Quilotórax 1 paciente



Cardiology in The Young ( 2013); 23, 711-716

# Cierre de Ductus en Prematuros



# Cierre de Ductus en Prematuros



# Cierre de DAP en Prematuros

- Cierre espontaneo:
- < 25 sem 15%
- 25 – 26 sem > 30%
- 27 – 28 sem 40 %
- >29 sem >75%
- Cierre espontaneo hacia los 7 días:
- 31% < 1000 gr y 67% > 1000gr

Am J Perinatol (2008) 25: 661-666











