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CACI2019

Pilar



Cierre de CIV post IAM.

Dr. Lucini Victorio





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CIV POST IAM

- GUSTO I (40000 pt.)
- COMPLICACION POCO FRECUENTE (0.2%).
- 74%-78% a los 30 d y al año de ocurrido el evento.
- 90% en ptes con tto médico exclusivo.
- Era post trombolítica y post ATC , se observó caída significativa de su incidencia (0.17-0,3%)





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CIV POST IAM

Factores de riesgo

- EDAD AVANZADA
- SEXO FEMENINO
- HTA
- INFARTO DE CARA ANTERIOR
- STROKE
- FALLO RENAL
- INSUFICIENCIA CARDIACA
- INFARTO ST
- KILLIP
- MAYOR TIEMPO DE REPERFUSION CORONARIA





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NECROSIS TRANSMURAL

Fisiopatología

↓
**LIBERACION ENZIMAS
LITICAS (coagulación,
necrosis)**

↓
**ADELGAZAMIENTO
DE LA PARED**

RUPTURA DE LA PARED

↓
↑ **QP/QS (EAP)**

↓
**CAIDA DEL VM
SHOCK**





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Civ post IAM

- GRACE STUDY:
- Menor incidencia en ptes tratados con ATC (0.7%) ,
vs ptes tratados con trombolisis (1.1%) .
- Menor incidencia – menor tiempo arteria abierta.
- Menor incidencia CIV post IAM en ATC primaria vs ATC electiva.
- MORTALIDAD: 41-80%



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Tipos de ruptura

- **SIMPLES:** defecto localizado, definido, generalmente secundario a infartos de cara ANTERIOR.
- **Vaso culpable DA: CIV APICAL**
- **COMPLEJAS:** lesión poco definida, con bordes anfractuosos, generalmente relacionados con infartos INFERIORES.
- **VASO CULPABLE CD dominante o CX Dominante:** defectos inferiores o posterobasales.





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Ventricular Septal Rupture Complicating Acute Myocardial Infarction: Identification of Simple and Complex Types in 53 Autopsied Hearts

BROOKS S. EDWARDS, MD, WILLIAM D. EDWARDS, MD, and JESSE E. EDWARDS, MD

Fifty-three hearts with rupture of the ventricular septum complicating acute myocardial infarction (AMI) were studied. Thirty-three of the hearts were from men (average age 76 years) and 20 were from women (average age 73 years). The study showed 2 types of rupture of the ventricular septum: *simple* (28 patients) and *complex* (25 patients). Simple ruptures were direct through-and-through defects. Complex ruptures were associated with serpiginous dissection tracts remote from the primary site of tear of the ventricular septum. Specimens were classified as to the location of the underlying AMI and the level of the septum (apex to base) at which the rupture occurred. Twenty-nine hearts had an inferior AMI and 24 an anterior AMI. Complex ruptures oc-

curred in 20 of the inferior AMIs (69%) and in 5 of the anterior AMIs (21%) ($p < 0.001$). Ruptures that involved the inferobasal portion of the septum were much more likely to be complex (94%) than ruptures in all other locations (27%, $p < 0.001$). Significant 3-vessel obstructive coronary arterial atherosclerosis was present in 48 hearts. Rupture of a second structure in addition to the ventricular septum was observed in 11 hearts (left ventricular free wall in 9 cases and papillary muscle in 2). The interval from the onset of the AMI to rupture of the septum could be estimated in 22 patients and averaged 4 days (median 2.5 days). Complete heart block reportedly occurred in 6 patients during hospitalization. (Am J Cardiol 1984;54:1201-1205)

33 Ptes Masc
20 ptes Fem

28 ptes ruptura SIMPLE
25 ptes ruptura COMPLEJA

69% IAM INF RUPTURAS COMPLEJAS
94% DE RUPTURAS COMPLEJAS
SEPTO INFEROBASAL



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CIV POST IAM "SIMPLE"

1202 VENTRICULAR SEPTAL RUPTURE

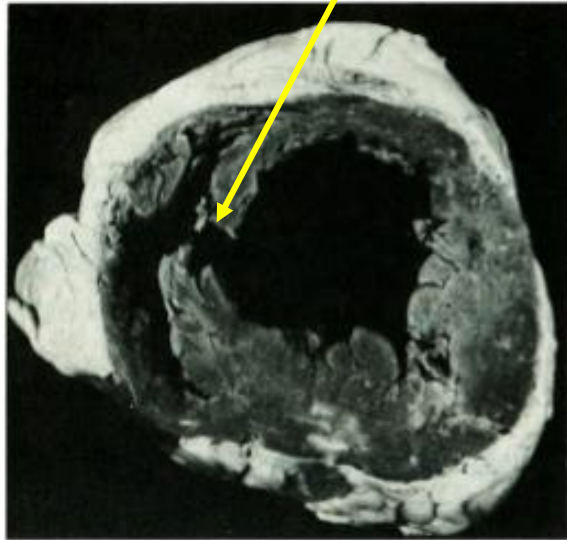


FIGURE 1. Cross section, viewed from the apex, of the ventricular portion of the heart. A simple type rupture of the ventricular septum at the level of slice 3 is apparent. The patient had sustained an acute anteroseptal myocardial infarction 10 days before death. Scars of old inferior acute myocardial infarction are also present.

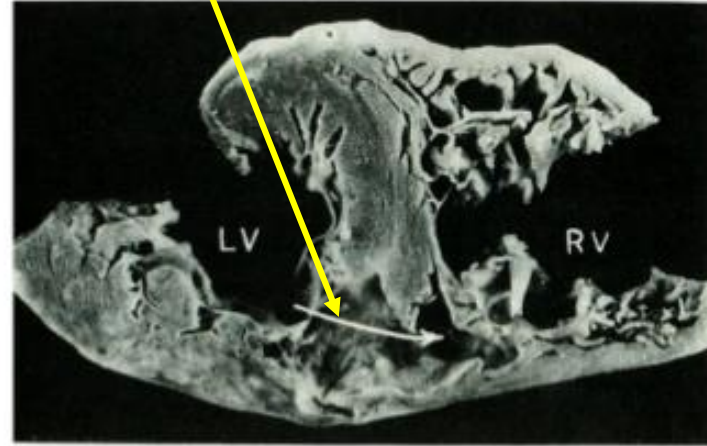


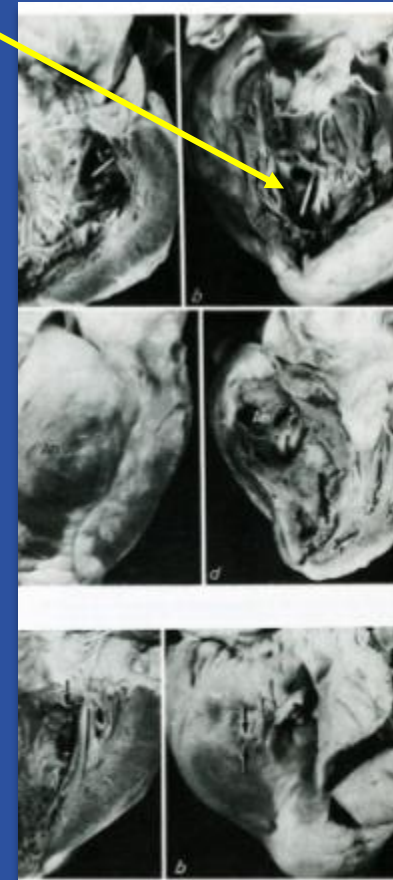
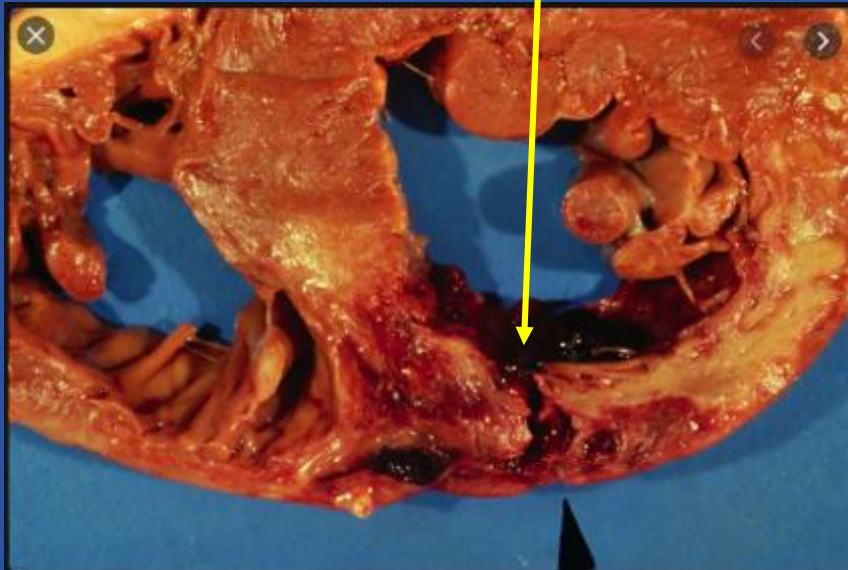
FIGURE 2. The only case of a simple type of ventricular septal rupture involving level 4 of the ventricles. Cross section of ventricular portion of heart after the ventricles have been opened. Specimen viewed from above. In the inferior basal aspect an endothelialized tract (arrow) directly connects the 2 ventricles. Histologically, the acute myocardial infarction was approximately 4 weeks old. LV = left ventricle; RV = right ventricle.

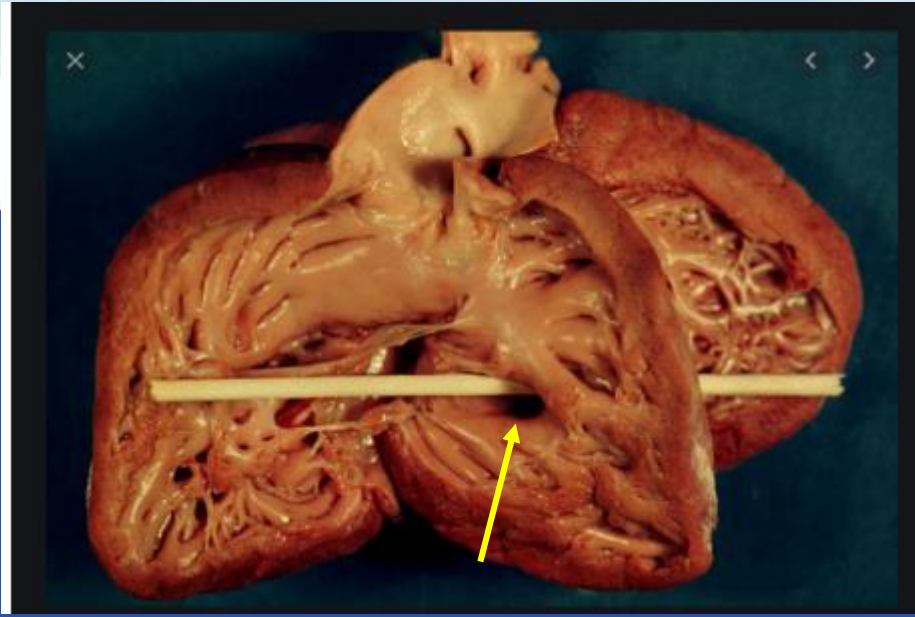


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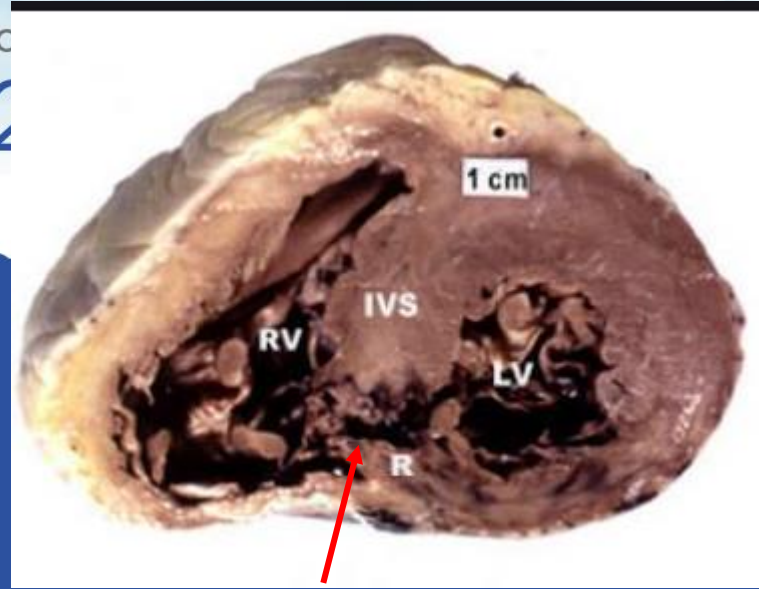
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FORMAS "COMPLEJAS"

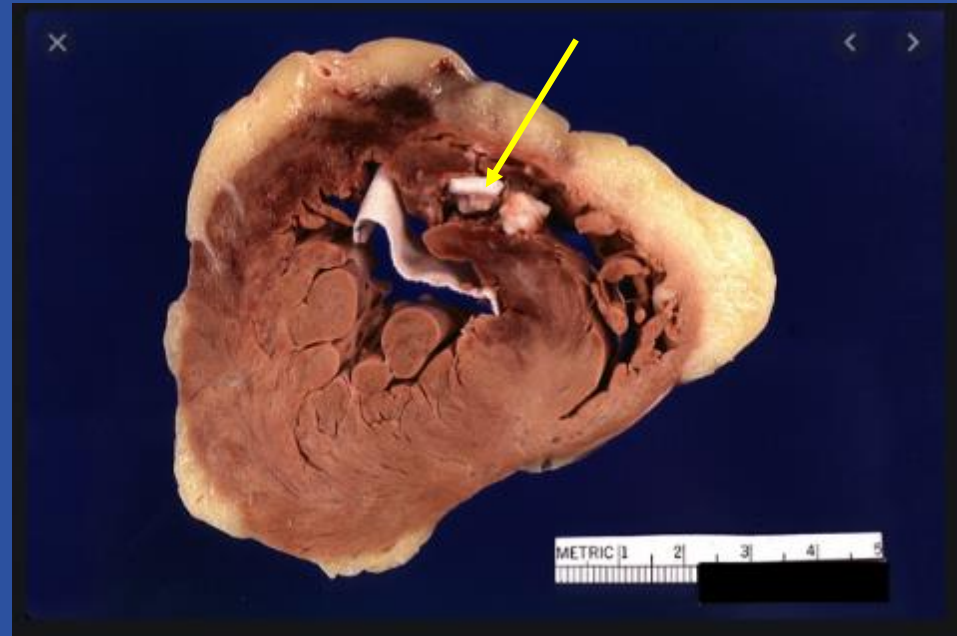




DEFECTOS CONGENITOS



CIV POST INFARTO



Ventricular Septal Rupture Complicating Acute Myocardial Infarction: Identification of Simple and Complex Types in 53 Autopsied Hearts

BROOKS S. EDWARDS, MD, WILLIAM D. EDWARDS, MD, and JESSE E. EDWARDS, MD

1204 VENTRICULAR SEPTAL RUPTURE

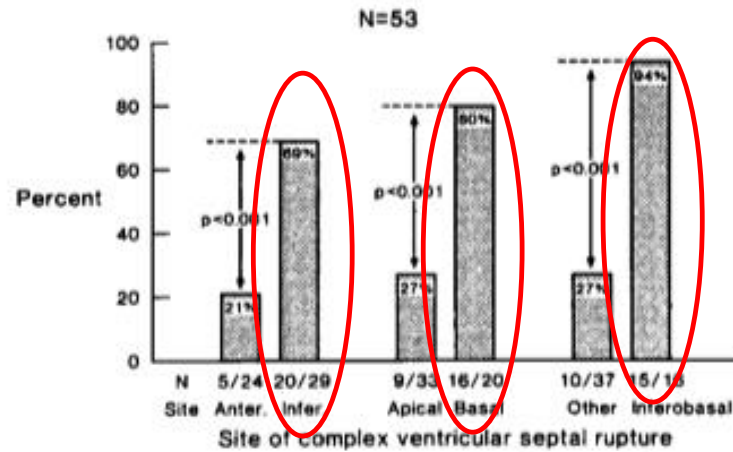


FIGURE 6. The frequencies of complex ventricular septal ruptures among (left) anterior (Anter.) and inferior (Infer.) infarctions, (center) apical and basal ruptures, and (right) interobasal ruptures compared with all others.

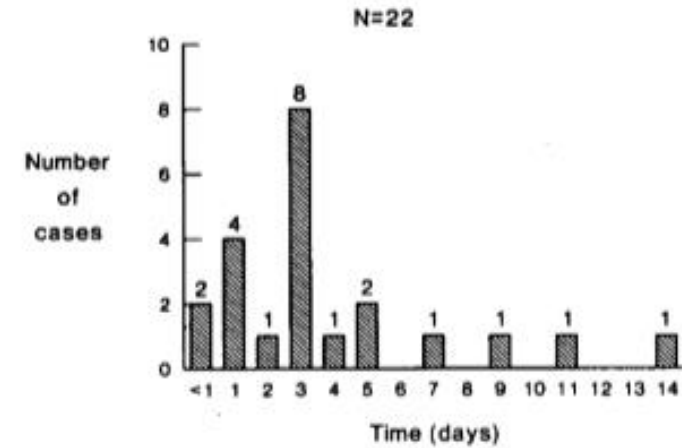


FIGURE 8. Estimation of time interval between onset of acute myocardial infarction and rupture of ventricular septum in 22 patients (mean interval 4 days, median 2.5).

Ventricular Septal Rupture Complicating Acute Myocardial Infarction: Identification of Simple and Complex Types in 53 Autopsied Hearts

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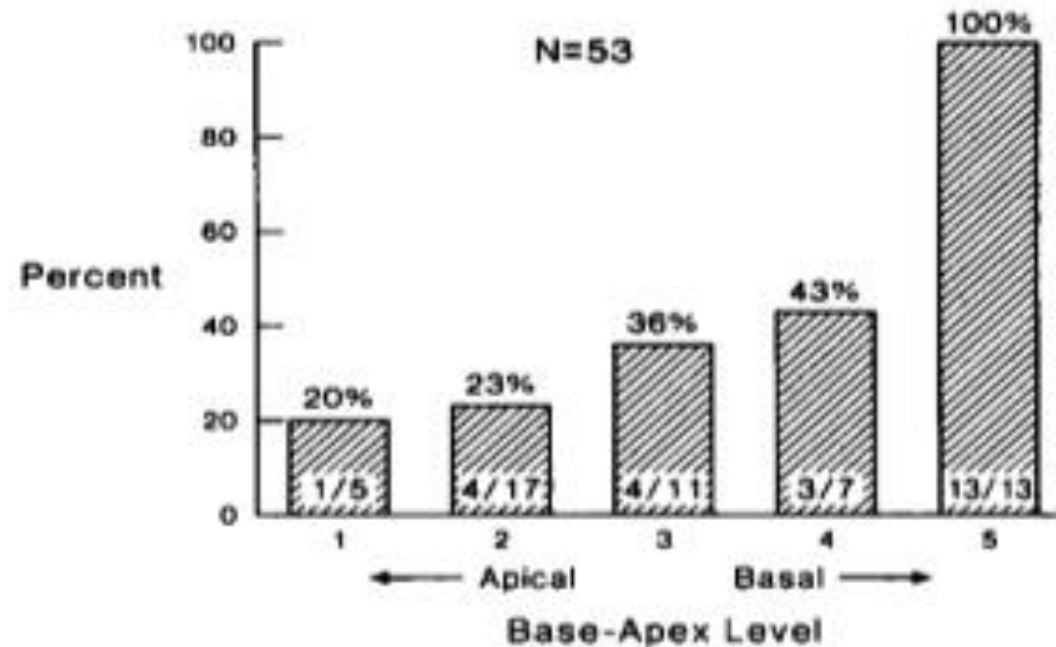


FIGURE 7. Frequency of complex ventricular septal ruptures occurring at each level of the ventricle from apex (slice 1) to base (slice 5).



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Clínica

- Síntomas: 3 a 5 d post IAM
- SHOCK registry : 16hs
- Disnea subita, ICC, shock cardiogénico, dolor torácico.
- Soplo holosistólico agudo.
- RX: Cardiomegalia, signos de hiperflujo pulmonar.
- ECOCARDIOGRAMA: presencia de defecto interventricular, localización, tamaño, función ventricular, insuficiencia mitral y tricuspídea.



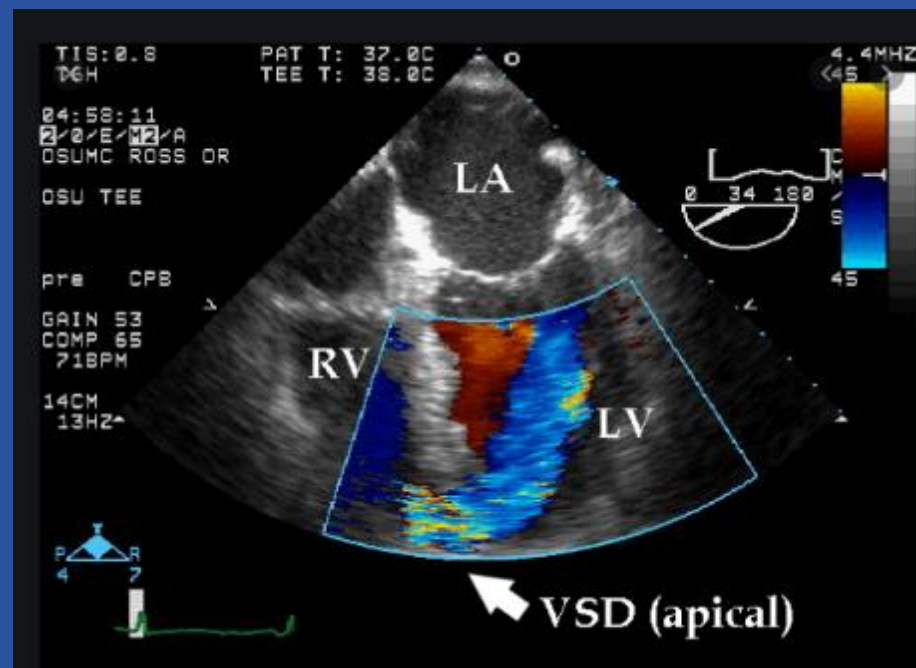
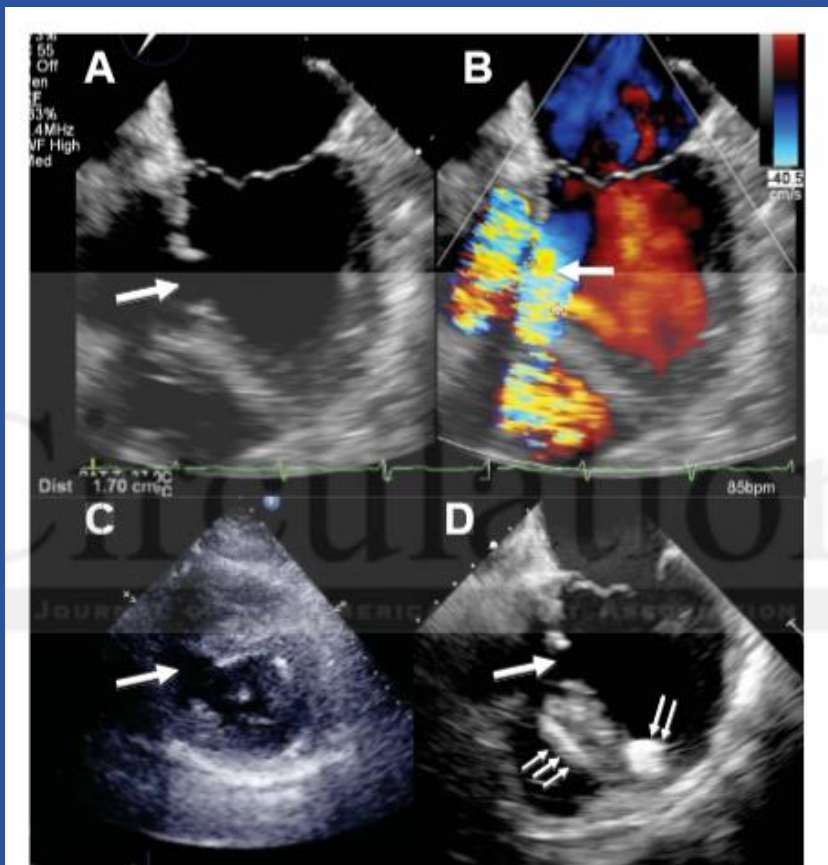


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DIAGNOSTICO: ECOCARDIOGRAMA



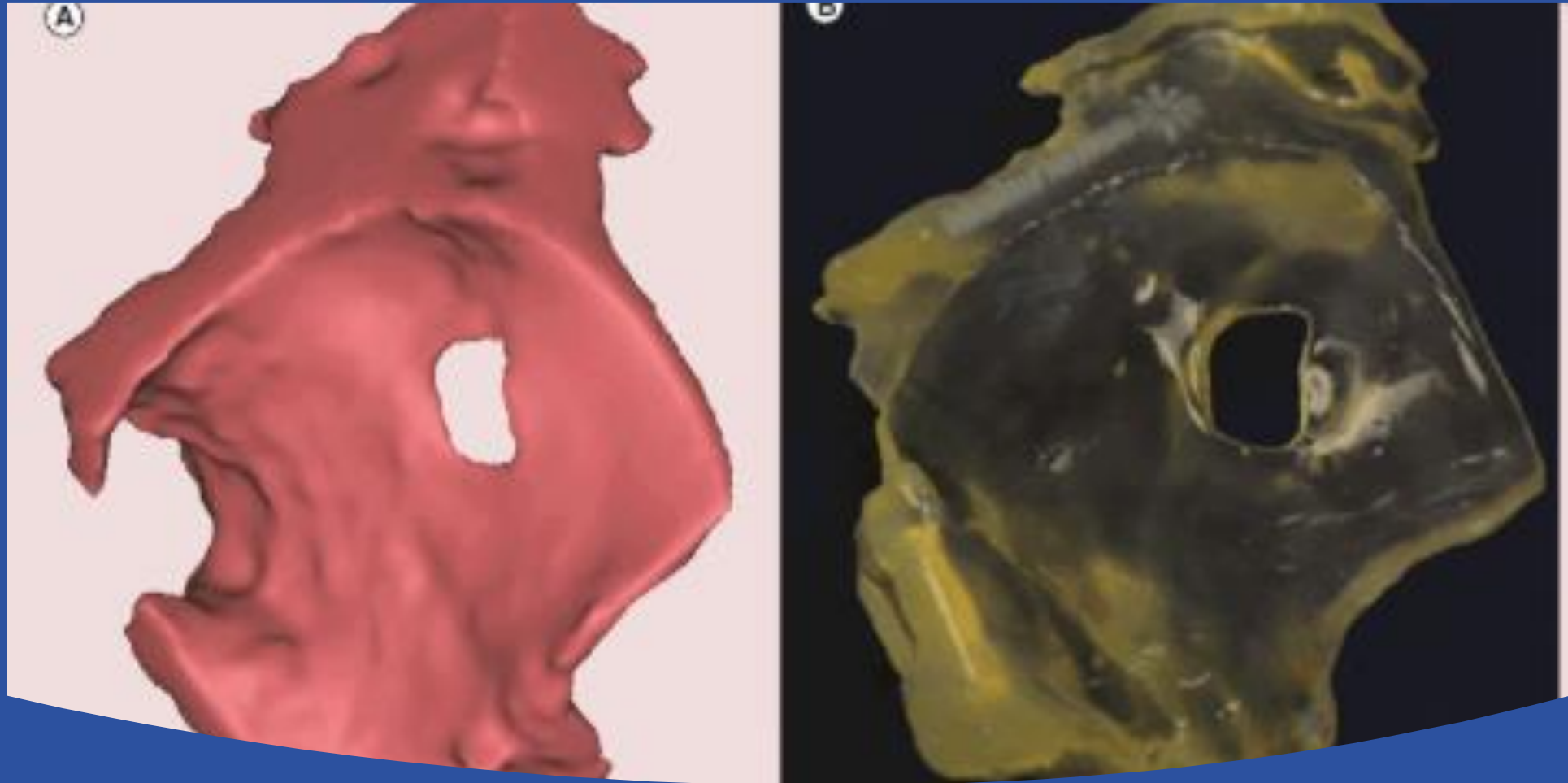


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RECONSTRUCCION 3D





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Tratamiento

- TTO Médico: Inotrópicos, diuréticos, ARM, balón de contrapulsación.
- TTO Quirúrgico (corrección temprana).
- CIERRE DE CIV POR CATETERISMO.





RESULTADOS

- SERIE: 19 ptes.
- IMPLANTE EFECTIVO: 14 pt (>3 semanas) (mort .4 pt)

11 implante primario

3post qx

- Cierre completo: 2pr
 - Shunt residual leve : 9 pt.
 - Shunt moderado 1pt
 - Shunt severo: 2pt
- } Cirugia





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Circulation

JOURNAL OF THE AMERICAN HEART ASSOCIATION



**American
Heart
Association®**

Percutaneous Closure of Post-Infarction Ventricular Septal Defect: In-Hospital Outcomes and Long-Term Follow-Up of UK Experience

Patrick A. Calvert, James Cockburn, Dylan Wynne, Peter Ludman, Bushra S. Rana, David Northridge, Michael J. Mullen, Iqbal Malik, Mark Turner, Saib Khogali, Lindsay Morrison, Martin Been, Rob Butler, Jonathan Byrne, John Thomson, Gruschen Veldtman, Philip MacCarthy, Len Shapiro, Ben Bridgewater, Jo de Giovanni and David Hildick-Smith

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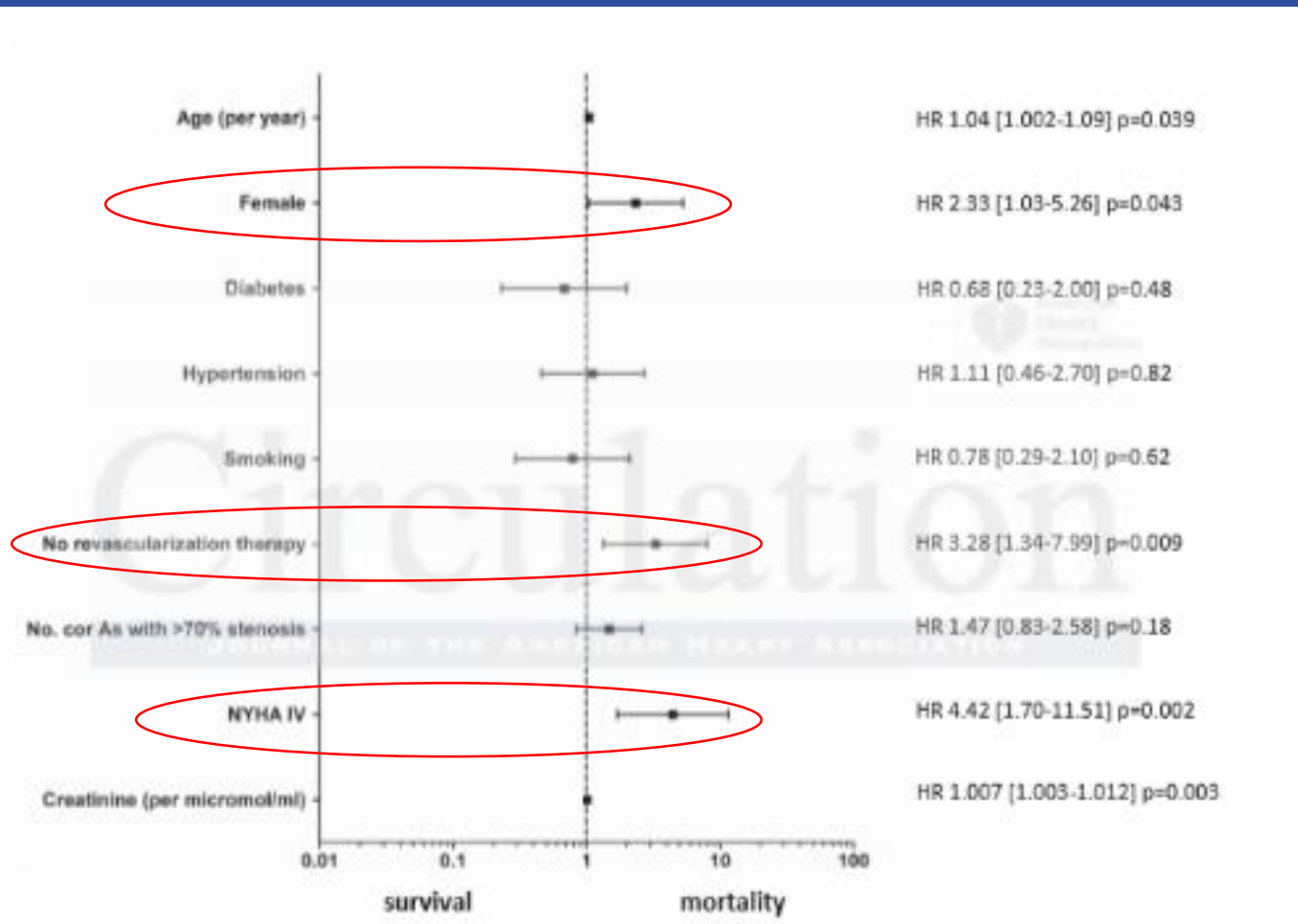
Table 1. Clinical parameters.

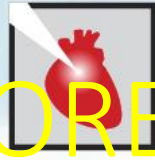
Clinical parameters	n = 53
Age	72.2 (10.8)
Female sex	22 (42%)
Height (cm)	169.7 (8.6)
Weight (kg)	74.5 (12.8)
Diabetes	11 (21%)
Hypertension	36 (68%)
Smoking	15 (28%)
Hypercholesterolemia	27 (51%)
Initial MI treatment:	
None	26 (49%) ←
Thrombolysis	10 (19%)
PCI	15 (28%)
CABG	2 (4%)
Rescue PCI	3 (6%)
PCI of IRA (any stage)	15 (28%)
Previous surgical closure	10 (19%)
Infarct territory:	
Inferior	35 (66%) ←
Anterior	18 (34%)
No vessels with CAD:	
1VD	31 (58%)
2VD	17 (32%)
3VD	5 (9%)
NHYA:	
1	0 (0%)
2	8 (15%)
3	21 (40%)
4	24 (45%)
Cardiogenic shock	26 (49%)
Creatinine ($\mu\text{mol/L}$)	161 (83)
IABP	33 (62%)
MI to procedure time (days)	13 [5-54]

MI (myocardial infarction), PCI (percutaneous coronary intervention), CABG (coronary artery bypass surgery), IRA (infarct related artery), CAD (coronary artery disease), VD (vessel disease). IABP (intra-aortic balloon counterpulsation pump)



FACTORES DE RIESGO

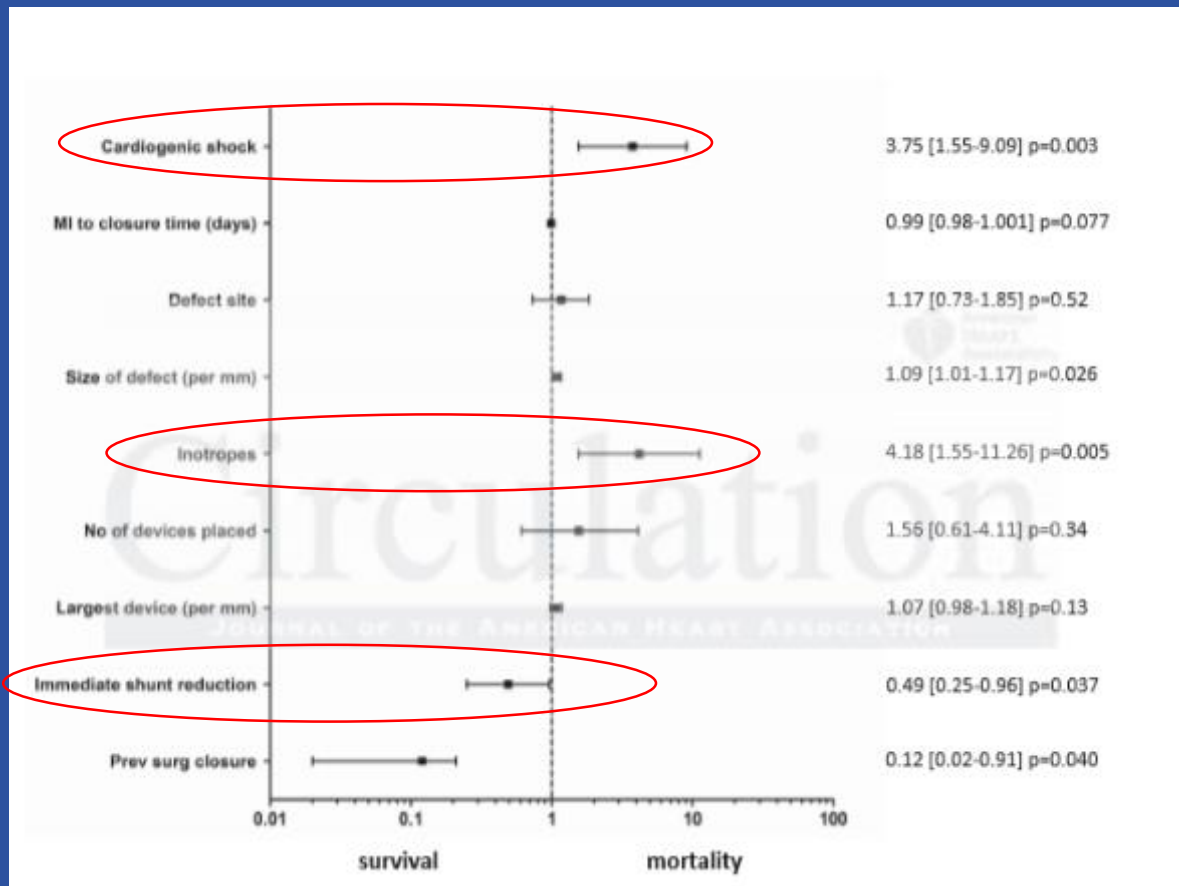




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FACTORES DE RIESGO

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RESULTADOS

- TASA DE EFECTIVIDAD: 47/53 ptes (89%)
- MULTIPLES DISPOSITIVOS: 3/7 ptes.
- CAUSAS DE FRACASO:
 - Imposibilidad de cateterizar CIV
 - Imposibilidad de pasar vaina
 - Defecto difuso no apto para dispositivo
 - Defecto > 24mm.



RESULTADOS



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- CIERRE COMPLETO:
11ptes. (22%)
- REDUCCION
SIGNIFICATIVA DEL
SHUNT: 32ptes. (63%)
- SIN MODIFICACIONES
DEL SHUNT: 8 ptes.
(16%)



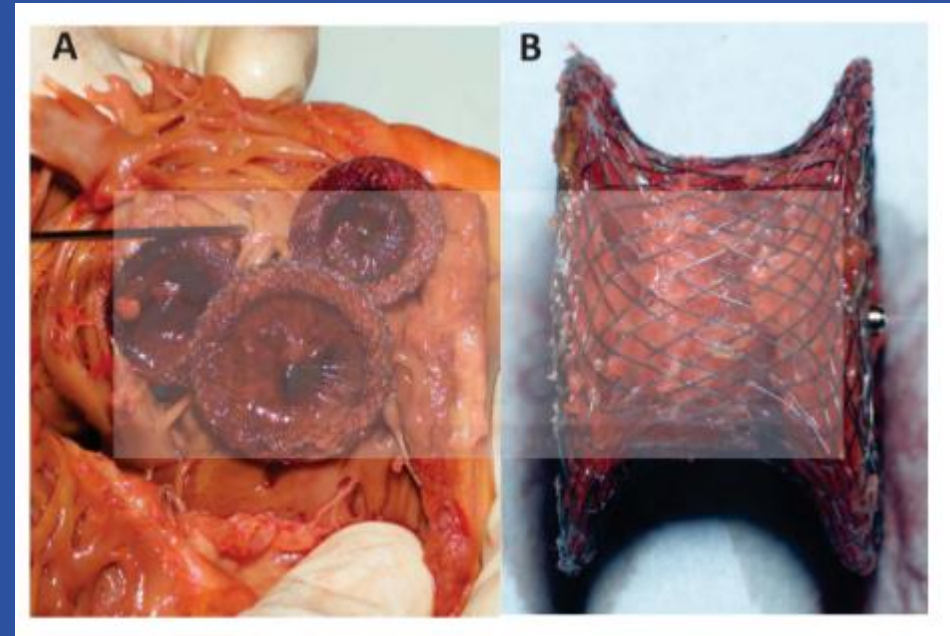


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SEGUIMIENTO

- MORTALIDAD: 18ptes (34%) PREVIO AL ALTA
- SOBREVIDA: 31ptes. (58%)
- MORTALIDAD A LARGO PLAZO: 4ptes. (7.5%)



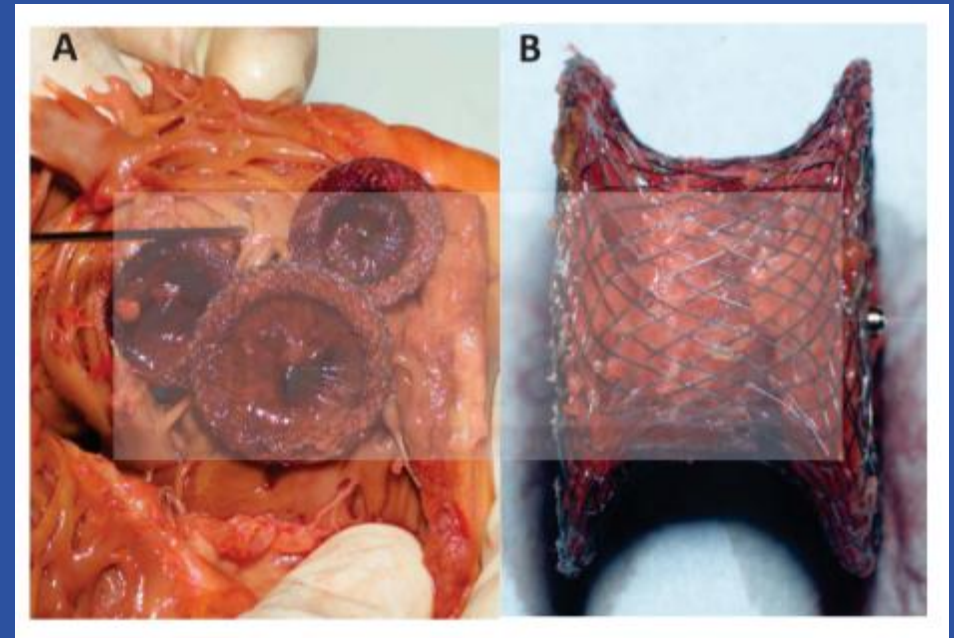


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Mortalidad tardía

- EDAD AVANZADA
- SEXO FEMENINO
- NYHA : CLASE IV.
- SHOCK CARDIOGENICO
- FALLO RENAL
- AUSENCIA DE REVASCULARIZACION
- USO DE INOTROPICOS

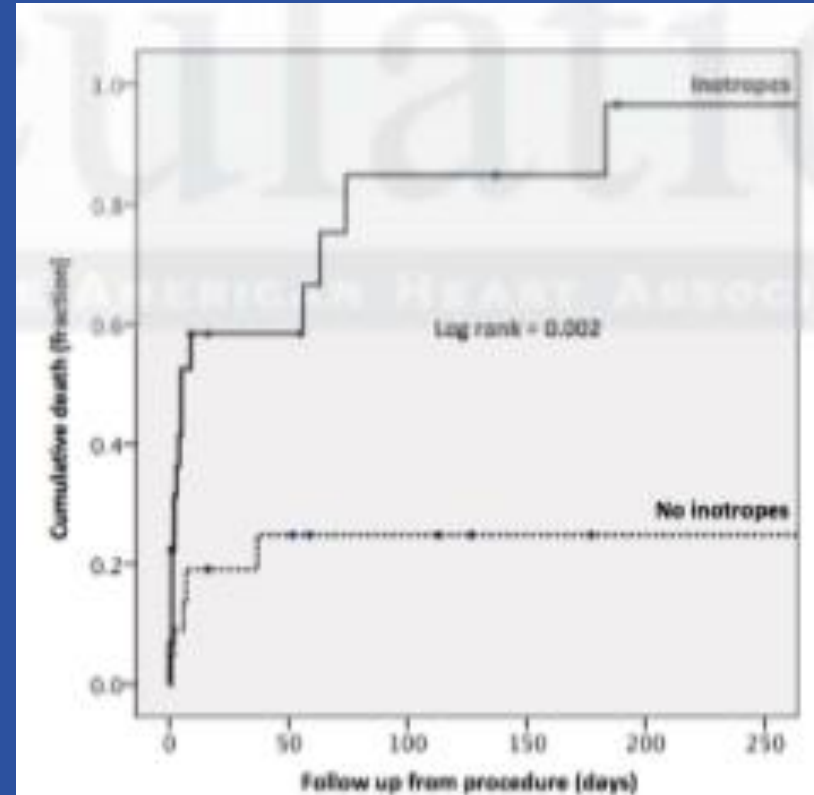
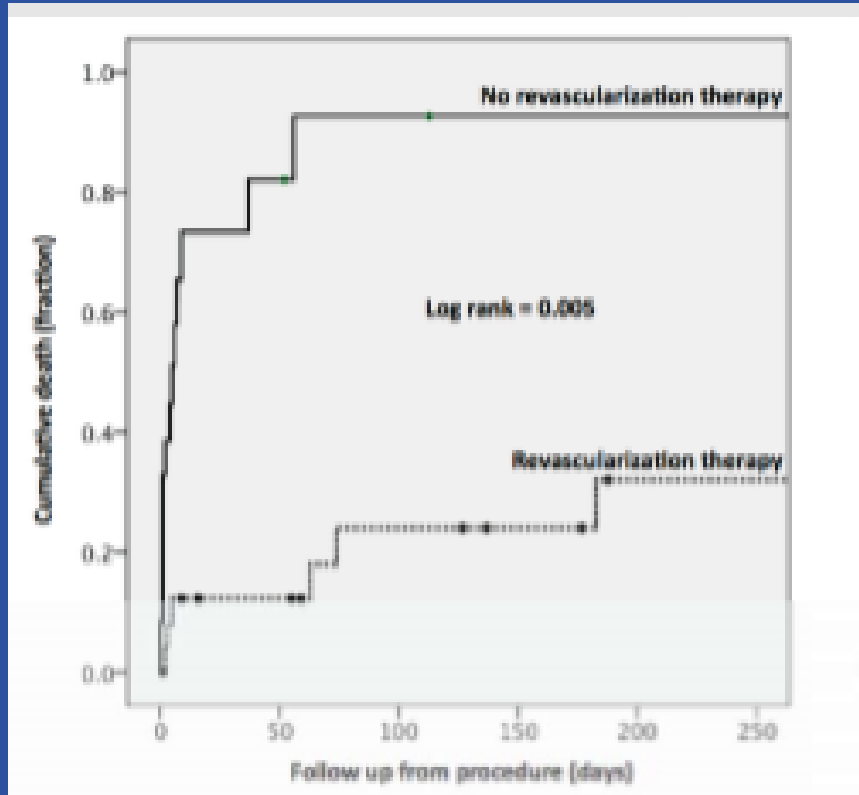




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RESULTADOS

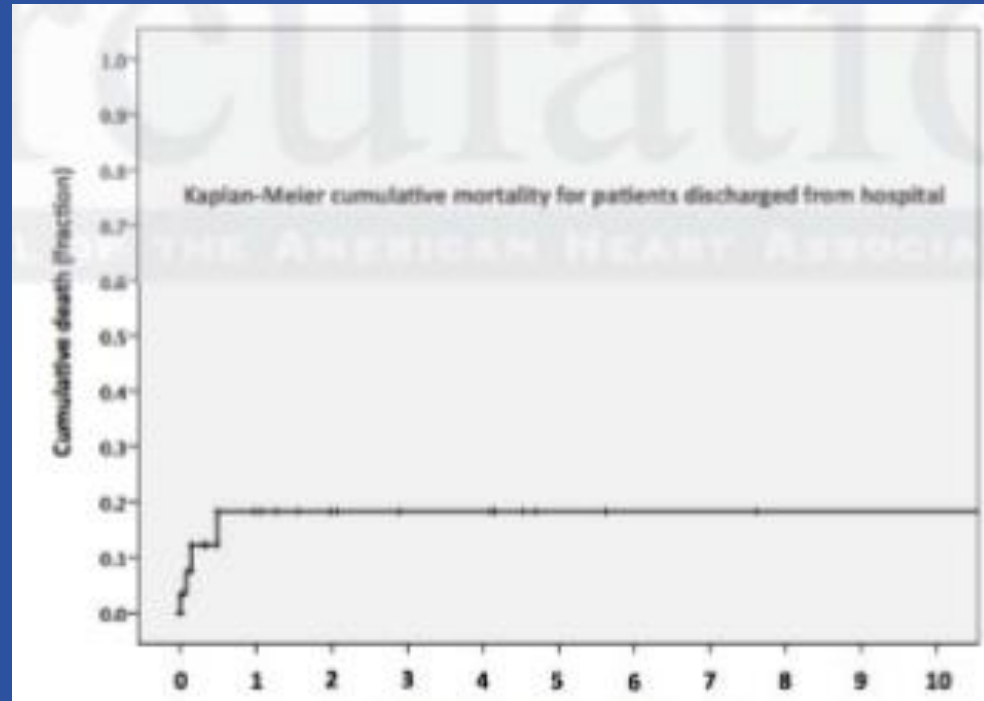
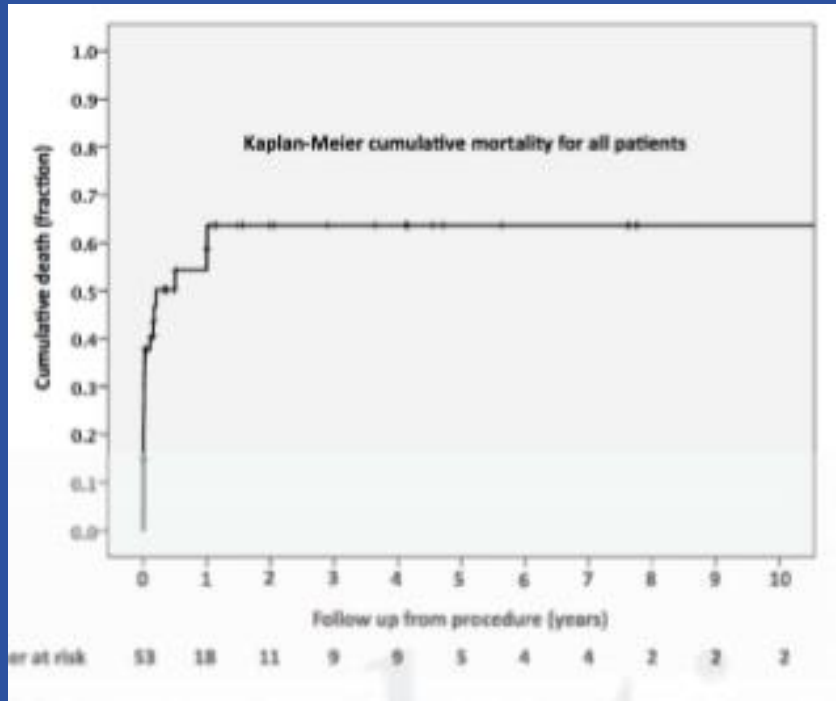




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RESULTADOS





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CIERRE DE CIV POST IAM

- ANESTESIA GRAL.
- TEE : DEFINIR LOCALIZACION Y TAMAÑO DE LA CIV
- PUNCION DE ARTERIA FEMORAL
- PUNCION DE VENA FEMORAL O YUGULAR (CIV APICAL O MEDIOVENTRICULAR)
- LOOP ARTERIOVENOSO CON GUIA SOFT
- SE AVANZA VAINA DESDE EL VD HACIA VI
- IMPLANTE DE DISPOSITIVO ENDOVASCULAR





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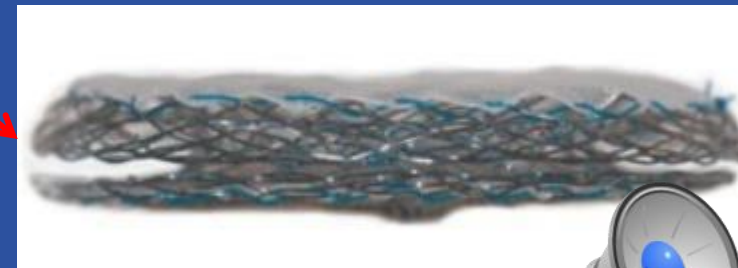
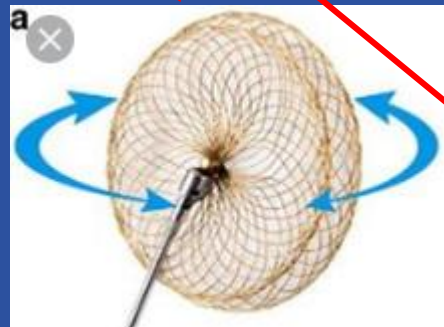
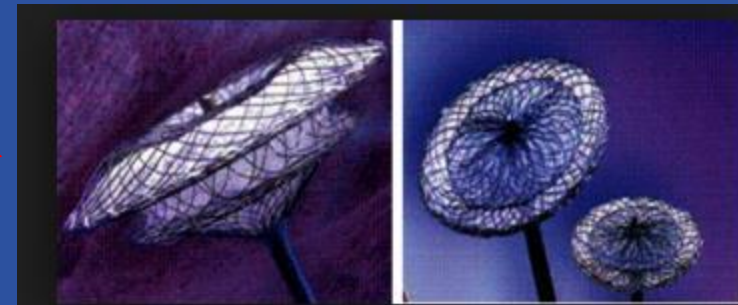
DISPOSITIVOS ENDOVASCULARES

MUSCULAR VSD OCCLUDER



ASD OCCLUDER

AGA AMPLATZER
LIFETECH CERAFLEX ASD
NIT OCCLUD ASD R

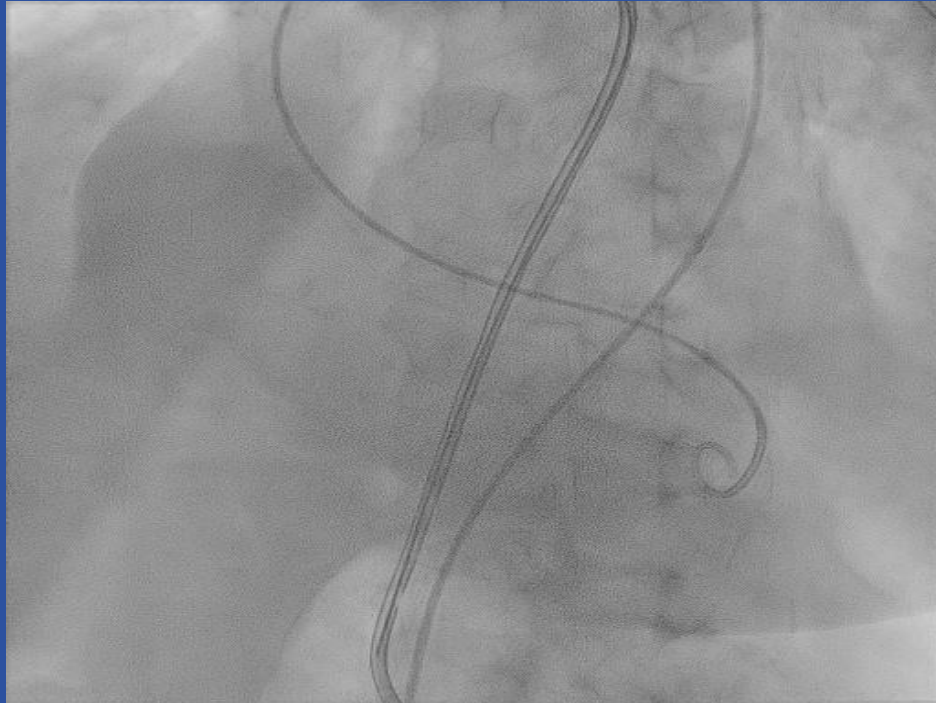




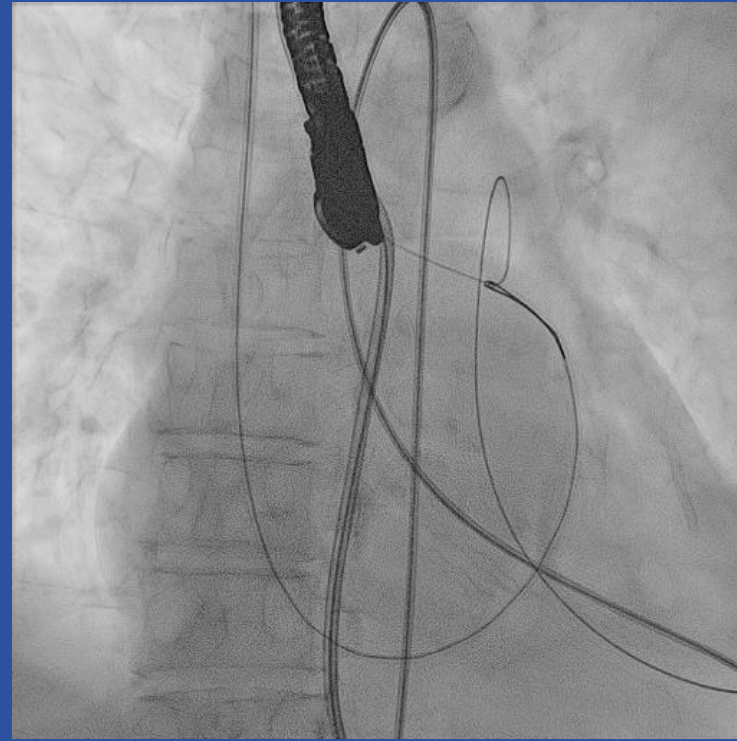
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Caso Clínico



OAI CRANEAL
CIV MEDIOVENTRICULAR



LOOP ARTERIOVENOSO

78 años
Sexo femenino
IAM > 24hs de evolución
Fuera de ventana ATC
Shock 6d internación



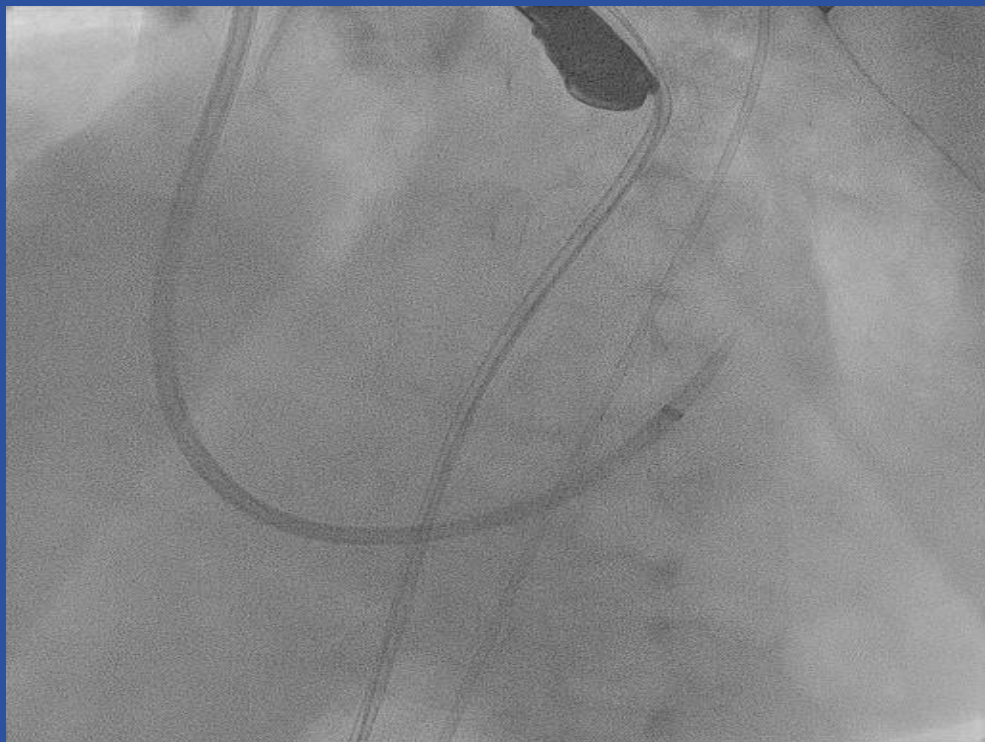


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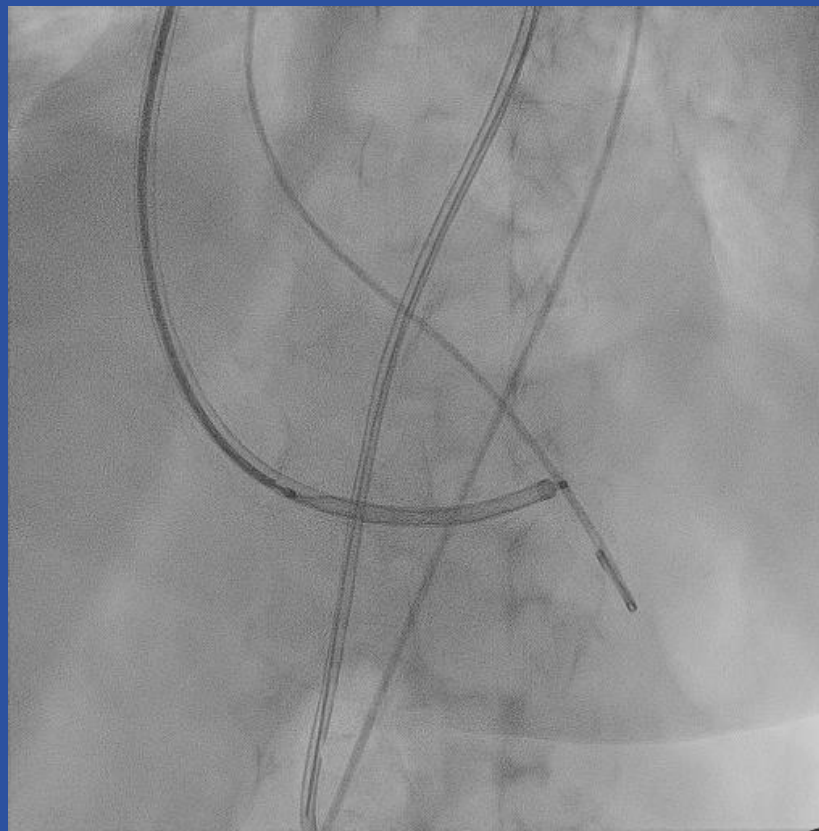
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Caso Clínico



VAINA EN VI



CONFIGURACION DISCO IZQ.

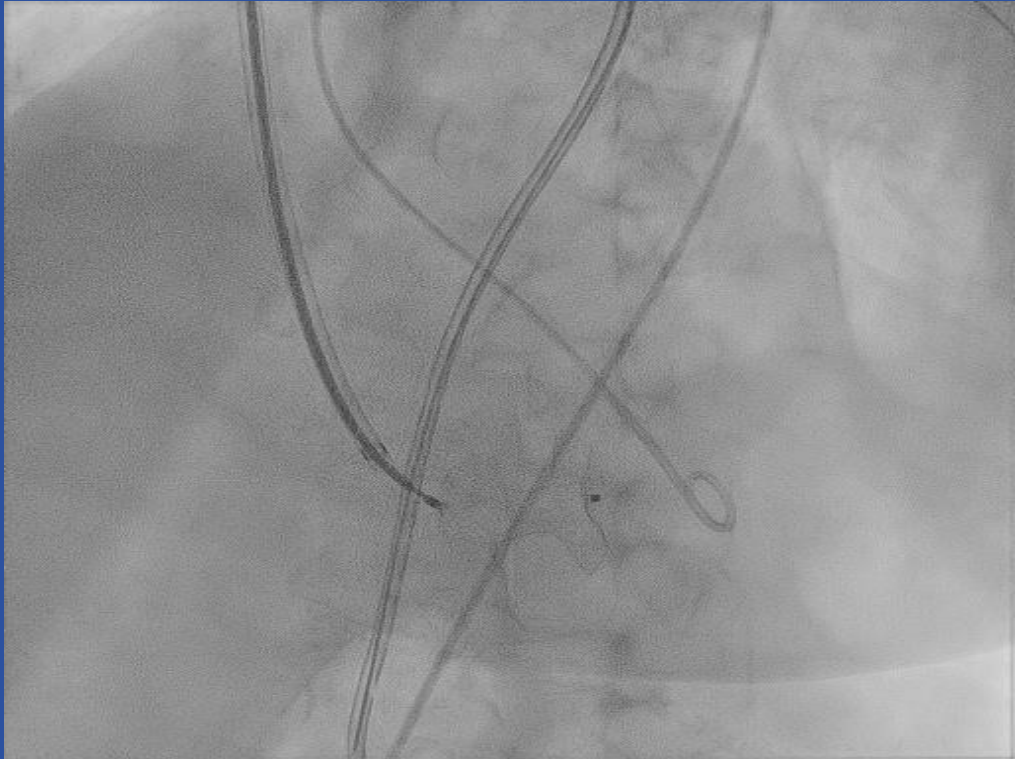




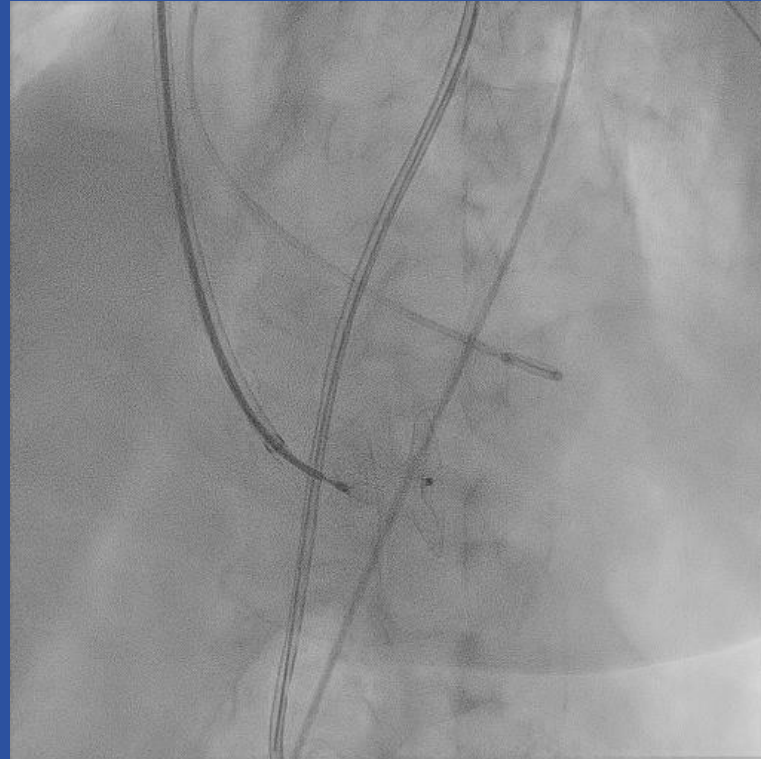
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Caso Clínico



CONTROL DEL DISPOSITIVO



LIBERACION DEL DISPOSITIVO

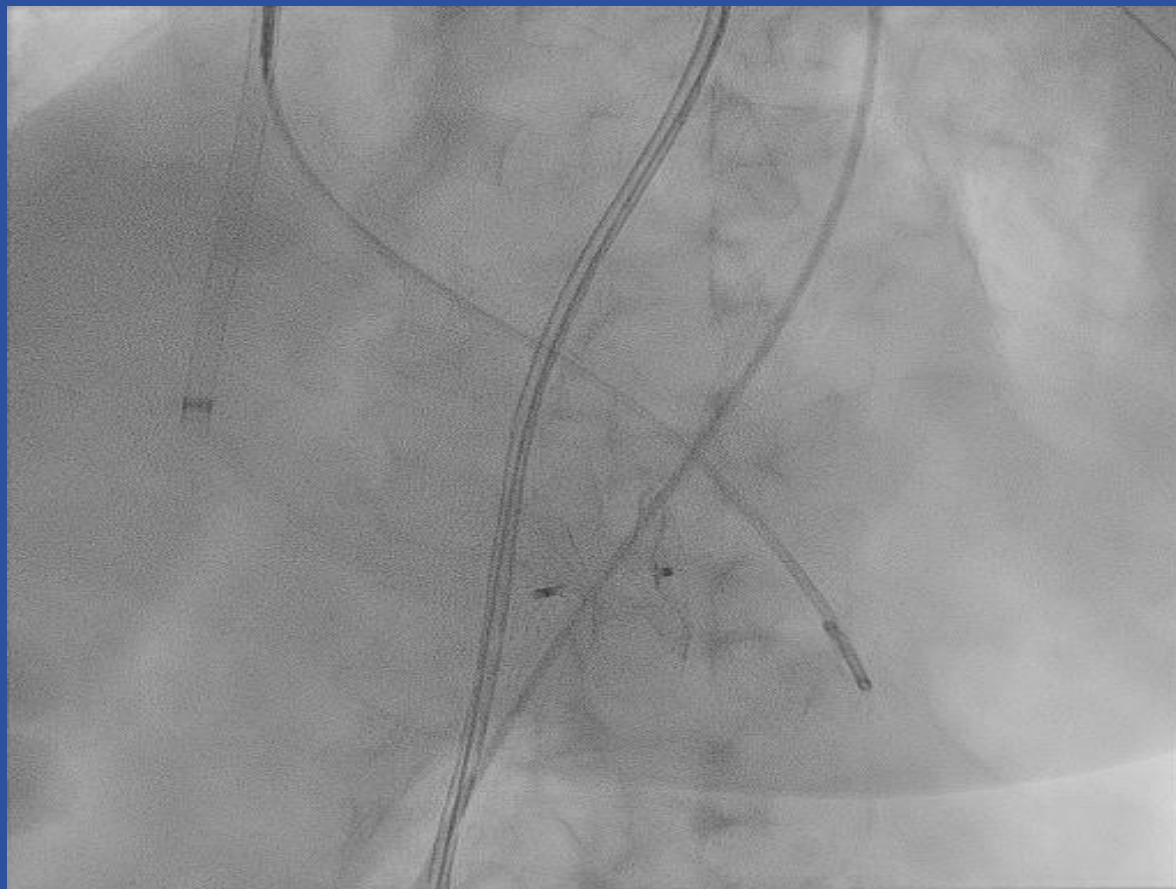




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CONTROL FINAL



CASO II



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- Pte. 87 a.
- Dolor precordial 10días, astenia ,adinamia.
- Soplo holosistólico al ingreso.
- CIV MEDIOVENTRICULAR POST INFARTO.
- CCG: oclusión tercio medio de DA: DES , con fenómeno de SLOW REFLOW.

- CIV medioventricular de 10-12mm.
- AGA ASD 17
- EVOLUCION: FALLO MULTIORGANICO.
- FALLECE A LOS 10d de internación.



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CIV POST IAM

BALON DE CONTRAPULSACION

Im: 1/104
Se: 12



JUAREZ LUISA GRACIELA
2777720
28/2/1931 F
HOSPITAL ITALIANO
1
CIERRE DUCTUS
Coro HDR

WL: 123 WW: 99 [D]
LAO: 38 CRA: 25

17/4/2018 13:19:02

Im: 1/82
Se: 11



JUAREZ LUISA GRACIELA
2777720
28/2/1931 F
HOSPITAL ITALIANO
1
CIERRE DUCTUS
Coro HDR

WL: 123 WW: 93 [D]
LAO: 9 CRA: 2

17/4/2018 11:26:52



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DISPOSITIVO MAL POSICIONADO

Im: 1/117
Se: 15



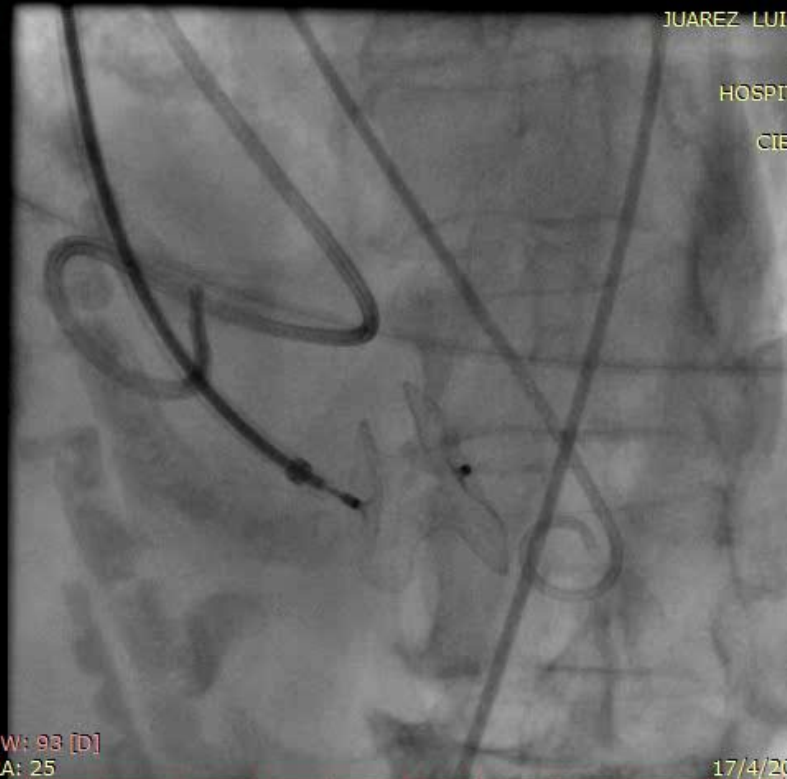
JUAREZ LUISA GRACIELA
2777720
28/2/1931 F
HOSPITAL ITALIANO
1
CIERRE DUCTUS
Coro HDR

WL: 123 WW: 93 [D]
LAO: 36 CRA: 25

17/4/2018 13:40:33

DISPOSITIVO BIEN POSICIONADO

Im: 1/102
Se: 16



JUAREZ LUISA GRACIELA
2777720
28/2/1931 F
HOSPITAL ITALIANO
1
CIERRE DUCTUS
Coro HDR

WL: 123 WW: 93 [D]
LAO: 36 CRA: 25

17/4/2018 13:41:35



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Im: 1/99
Se: 18

CONTROL FINAL

JUAREZ LUISA GRACIELA
2777720
28/2/1931 F
HOSPITAL ITALIANO
1
CIERRE DUCTUS
Coro HDR

WL: 123 WW: 98 [D]
LAO: 36 CRA: 25

17/4/2018 13:42:35



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CONCLUSIONES

- LA CIV POST INFARTO ES UN EVENTO DE ALTA MORTALIDAD INDEPENDIEMENTE DEL TTO.
- SE DEBE LOGRAR LA REVASCULARIZACION COMPLETA DEL PTE.
- EL TTO QUIRURGICO O EL CIERRE CON DISPOSITIVO DEBE REALIZARSE EN FORMA TEMPRANA.
- EL CIERRE CON DISPOSITIVO ES UNA ALTERNATIVA MENOS INVASIVA , POSIBLE QUE NO ACARREA RIESGOS INCREMENTALES RESPECTO DEL CUADRO DE BASE.
- SON PROCEDIMIENTOS DE RESCATE EL PTES DE ALTA MORTALIDAD





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MUCHAS GRACIAS

