

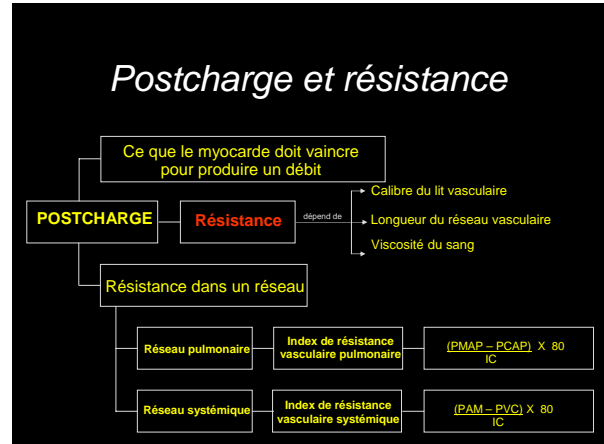
Évaluation de la fonction cardiaque III

Programme d'anesthésie et de soins intensifs




André Denault MD FRCPC

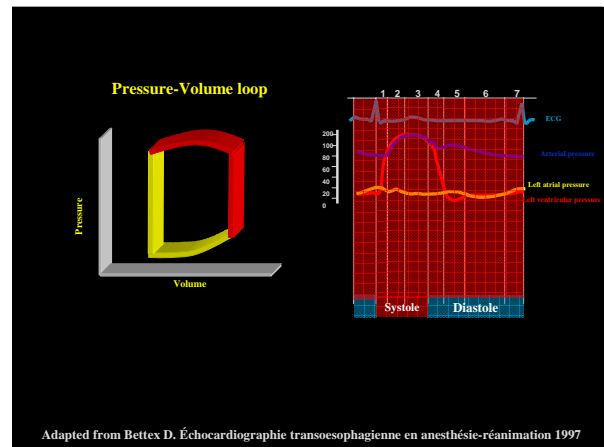
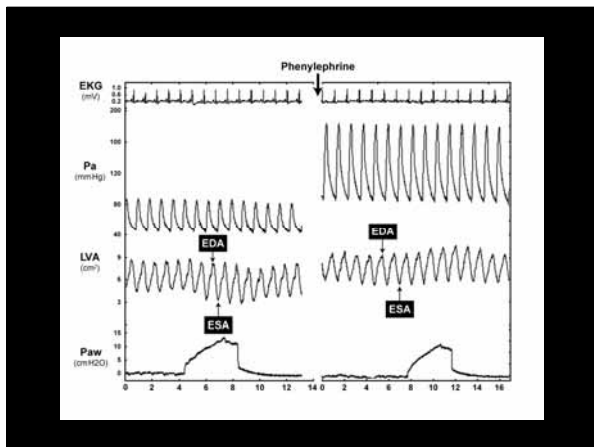
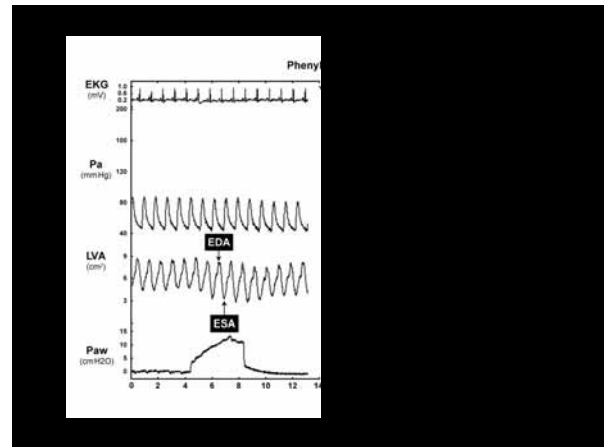
8 décembre 2004

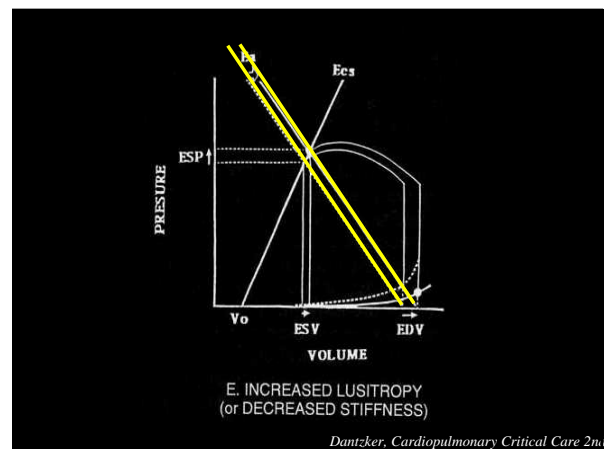
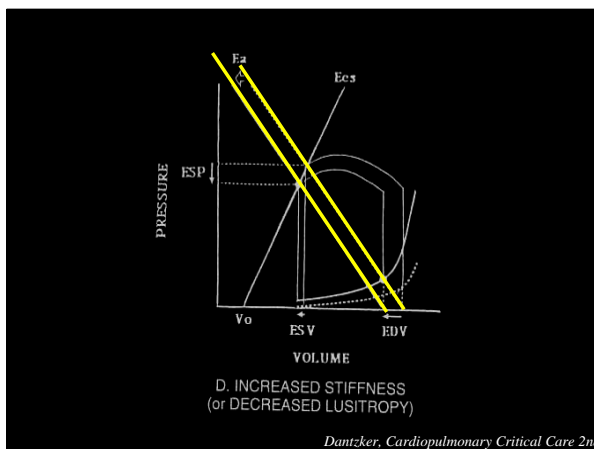
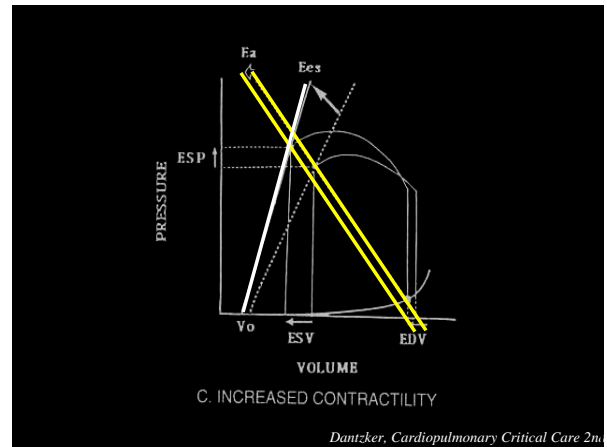
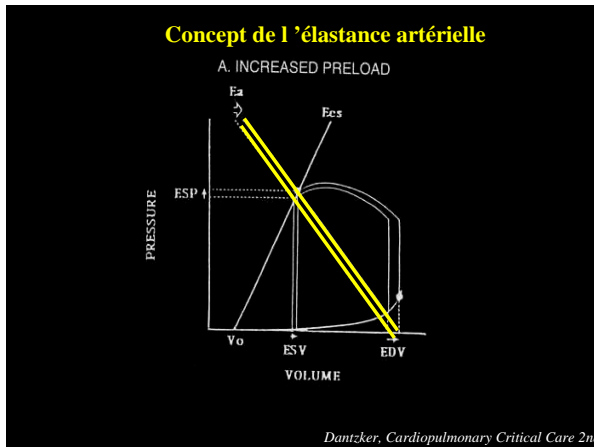
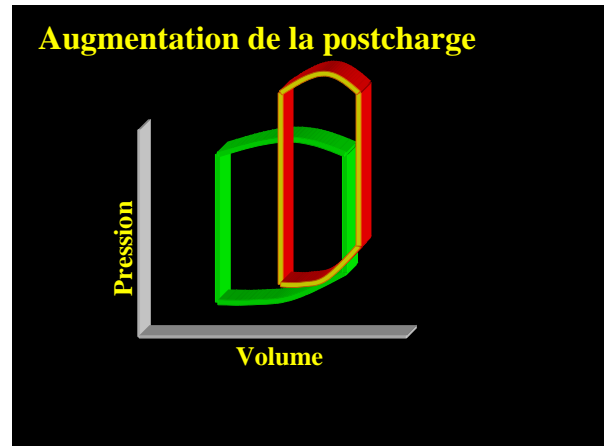
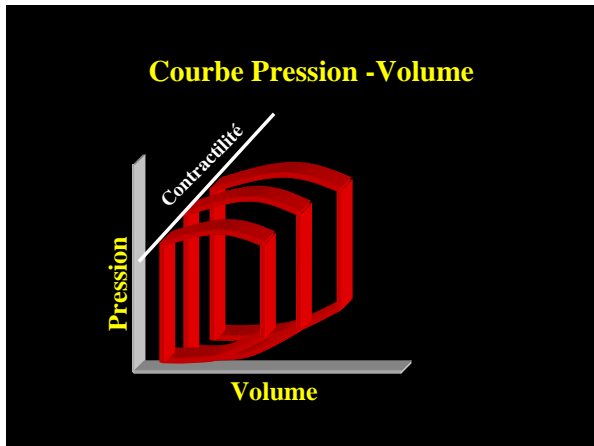



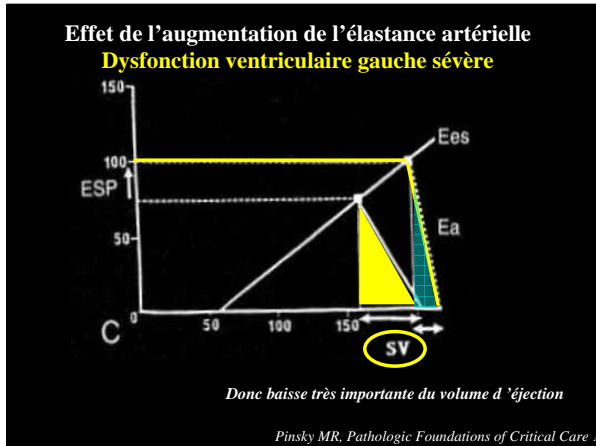
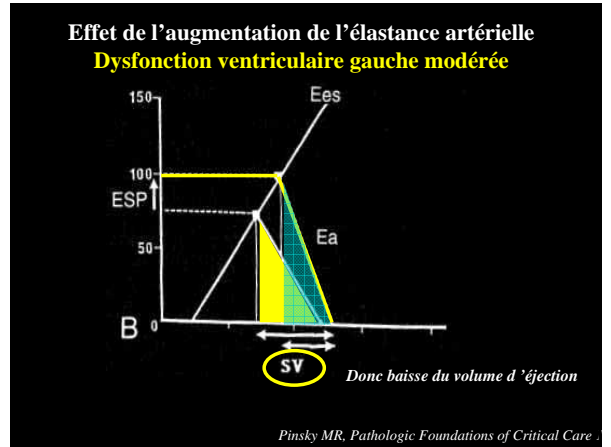
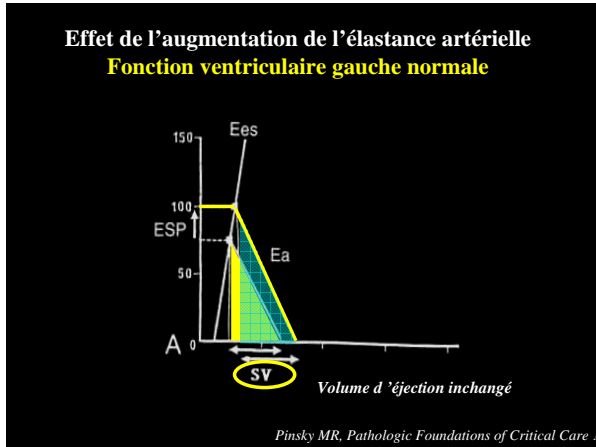
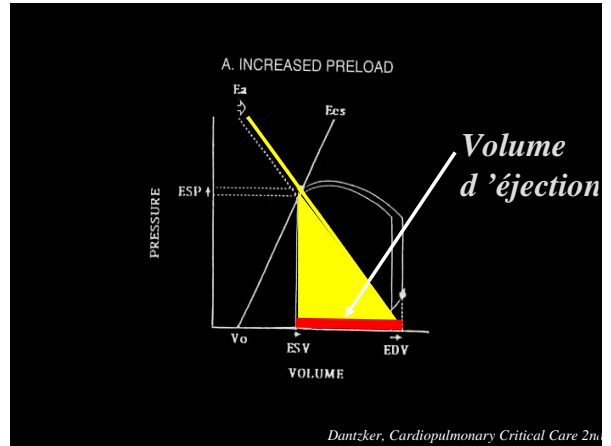
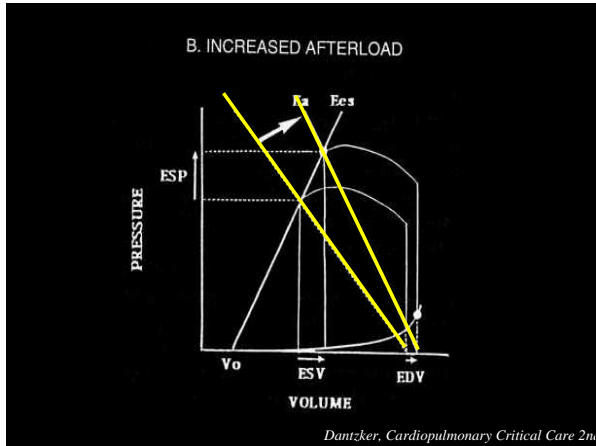
Neosynephrine



- ✓ Alpha pur
- ✓ 1 ug = 1 mmHg
- ✓ Augmente la postcharge et peut réduire le DC si insuffisance cardiaque





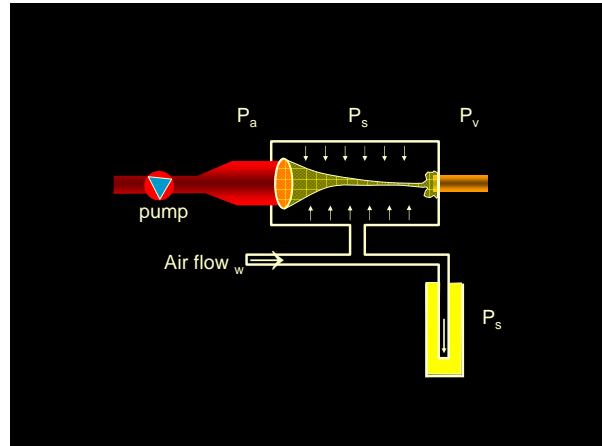
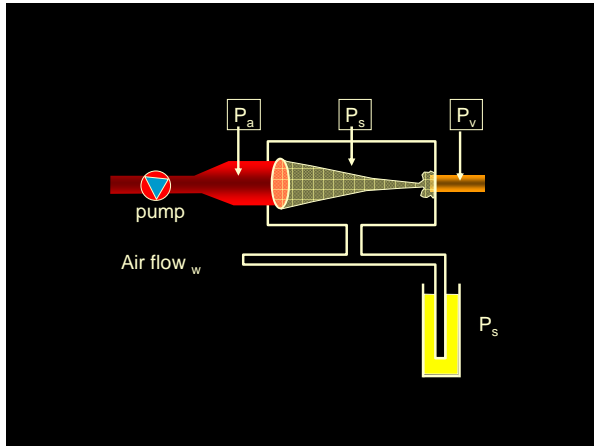


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Editorial
Pulmonary vascular resistance
A meaningless variable
A. Versprille
Pathophysiological Laboratory, Department of Pulmonary Diseases, Erasmus University, Rotterdam, The Netherlands

Résistance vasculaire pulmonaire = $\frac{PAP\text{ moyenne} - Wedge}{Débit\ cardiaque}$



$$\text{RVS/RVP} = \frac{(\text{TAm-TVC})/\text{DC}}{(\text{PAPm-Wedge})/\text{DC}}$$

$$= \text{TAm / PAPm}$$



Valeur Pronostique du Ratio TAM/PAPm en Chirurgie Cardiaque

Arnaud Robitaille, M.D., A-Y Denault, M.D.,
F.R.C.P.C. P., Couture, M.D., F.R.C.P.C., S. Bélisle,
M.D., F.R.C.P.C., Annik Fortier, MSc, Marie-Claude
Guertin, PhD, M. Carrier, M.D., F.R.C.S.C., Raymond
Martineau, M.D., F.R.C.P.C.

Résultats: Étude univariée du bilan hémodynamique

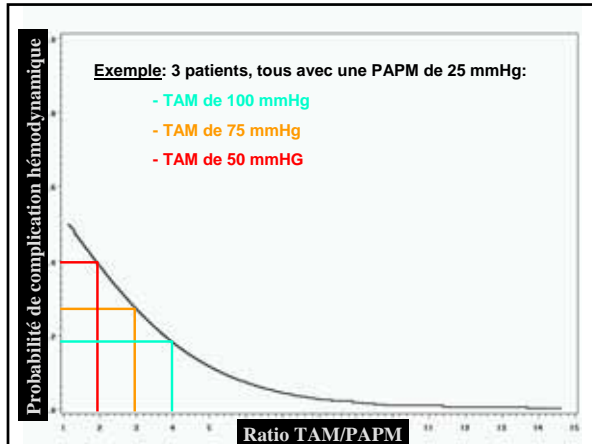
Variable	Population totale (n = 1439)	Population sans complication (n = 1137)	Population avec complication (n = 302)	Valeur P	Aire sous la courbe de ROC
PCWP (mmHg)	14 ± 6	13 ± 5	16 ± 7	< 0.0001	0.59 (0.54-0.63)
ICVP (mmHg)	10 ± 4	10 ± 4	12 ± 5	< 0.0001	0.59 (0.56-0.63)
HR (bpm)	61 ± 13	60 ± 12	63 ± 15	0.0022	0.54 (0.51-0.58)
SAP (mmHg)	112 ± 18	113 ± 18	109 ± 19	0.0044	0.55 (0.51-0.59)
DAP (mmHg)	55 ± 11	56 ± 11	53 ± 11	< 0.0001	0.58 (0.55-0.62)
MAP (mmHg)	74 ± 12	75 ± 11	72 ± 12	< 0.0001	0.55 (0.51-0.59)
SPAP (mmHg)	31 ± 10	30 ± 9	36 ± 13	< 0.0001	0.66 (0.63-0.70)
PCWP - Vmax (mmHg)	11 ± 9	10 ± 9	13 ± 9	< 0.0001	0.59 (0.55-0.63)
PAPM (mmHg)	21 ± 7	20 ± 6	25 ± 9	< 0.0001	0.64 (0.61-0.68)
SVRI	2449 ± 717	2444 ± 692	2470 ± 806	0.6153	0.50 (0.46-0.54)
PVRI (dynes.sec/cm ⁵ /m ²)	293 ± 187	275 ± 169	360 ± 231	< 0.0001	0.61 (0.57-0.65)
SV (ml/m ²)	37 ± 9	38 ± 9	34 ± 10	< 0.0001	0.62 (0.58-0.66)
TVSWI (gm/m ²)	30 ± 10	32 ± 10	26 ± 10	< 0.0001	0.66 (0.63-0.70)
RVSWI (gm/m ²)	5.3 ± 2.8	5.2 ± 2.7	5.8 ± 3.3	0.0050	0.55 (0.52-0.59)
TAM/PAPM	3.9 ± 1.4	4.0 ± 1.4	3.3 ± 1.3	< 0.0001	0.67 (0.63-0.70)
SVRI/PVRI	9.1 (2-24)	10 (2-24)	8 (1-24)	< 0.0001	0.62 (0.58-0.66)
TVSWI/RVSWI	6.1 (0.6-64.0)	6.4 (0.9-64.0)	5.1 (0.6-28.8)	< 0.0001	0.64 (0.60-0.68)
MPAP-PCWP (mmHg)	7 ± 4	7 ± 4	9 ± 5	< 0.0001	0.59 (0.55-0.63)

Résultats: Analyse multivariée

Analyse multivariée par régression logistique multiple "pas à pas" (stepwise)
Outcome = Complication Hémodynamique

Variable	Unité	OR	IC 95%	Valeur P
Utilisation de CEC	----	3.8	2.4 - 6.2	< 0.0001
Séparation difficile de CEC	----	3.5	2.4 - 5.2	< 0.0001
Déficit neurologique préop	----	2.5	1.2 - 5.2	0.0153
RVSWI (gm/m ²)	-10	2.3	1.2 - 4.5	0.0166
BIA préop	----	2.0	1.0 - 3.9	0.0384
Défaillance cardiaque préop	----	1.6	1.1 - 2.3	0.0101
TAM/PAPM	-1	1.4	1.2 - 1.7	< 0.0001
MPAP-PCWP (mmHg)	10	1.4	1.0 - 2.1	0.0516
Age (années)	10	1.3	1.1 - 1.6	0.0004
Hauteur (cm)	-10	1.3	1.1 - 1.6	0.0006

Hosmer and Lemesho goodness of fit test: p = 0.5268



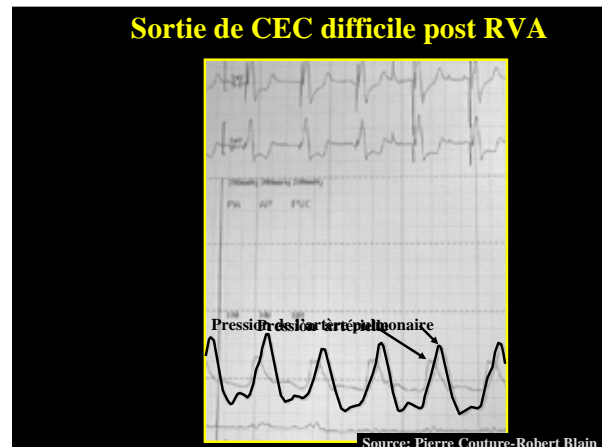
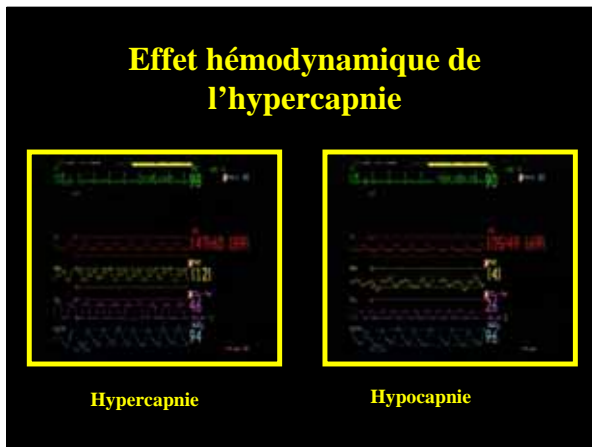
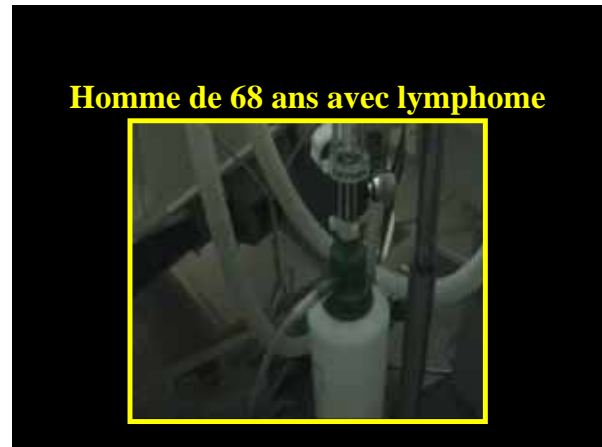
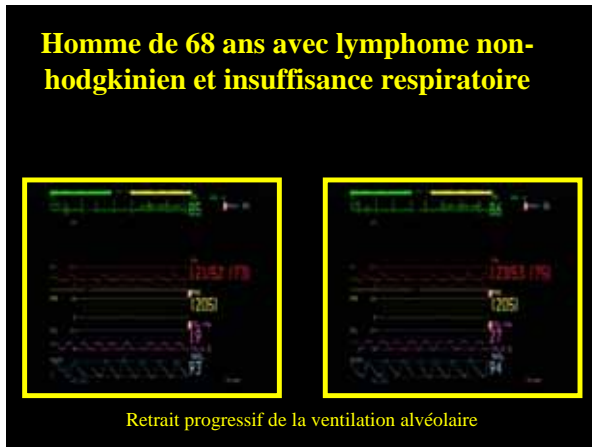
Femme de 56 ans RVM

Avant flolan

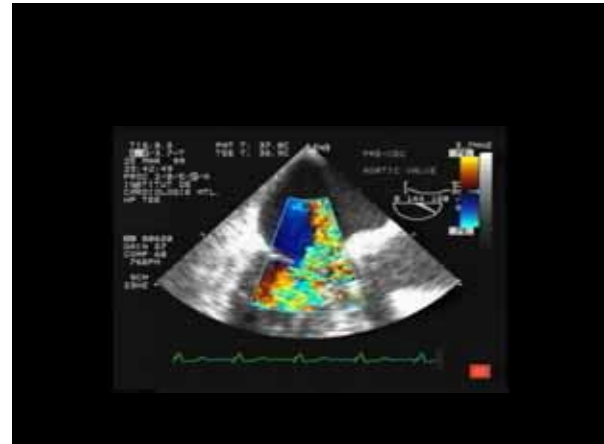
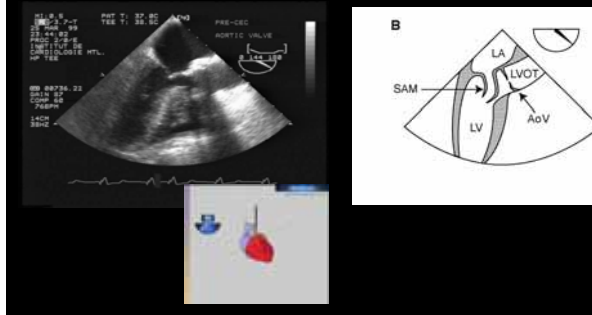
CALCULS HEMODYNAMIQUES		ALAR
ENTREES	RESULTATS	
T (ca) = 164	VS = 32	
PDS(Ka) = 77.40	RVS = 1280	
FC(F) = 22	RVP = 3.28	
(08/46)	NSVC = 38	
PVC = 20	NSVD = 11	
(08/46)		
DC = 3.5	IC = 1.9	
(08/47)		
FC = 67	IRVS = 2353	
PA (M7) = 76	IRVP = 559	
aP (M7) = 36	IRSV = 21	
	IRSD = 6	
	S.C. = 1.04	

Après flolan

CALCULS HEMODYNAMIQUES		ALAR
ENTREES	RESULTATS	
T (ca) = 164	VS = 72	
PDS(Ka) = 77.40	RVS = 873	
FC(F) = 21	RVP = 145	
(09/06)	NSVC = 44	
PVC = 18	NSVD = 11	
(09/06)		
DC = 4.4	IC = 2.4	
(09/05)		
FC = 61	IRVS = 1606	
PA (M7) = 66	IRVP = 267	
aP (M7) = 29	IRSV = 24	
	IRSD = 6	
	S.C. = 1.04	



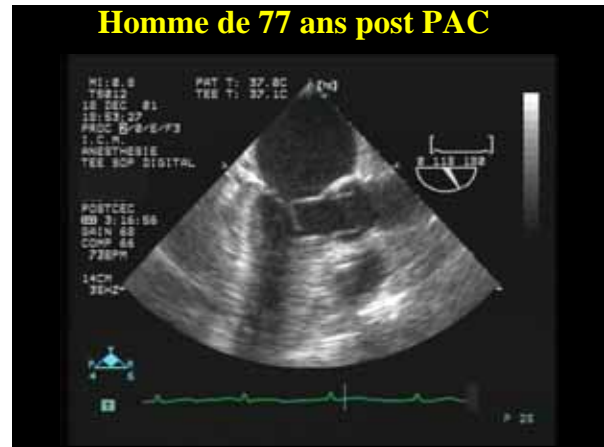
Sortie de CEC difficile post RVA



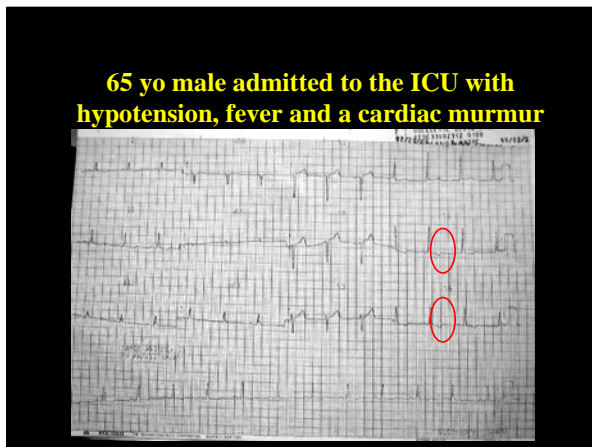
Homme de 77 ans post PAC



Homme de 77 ans post PAC

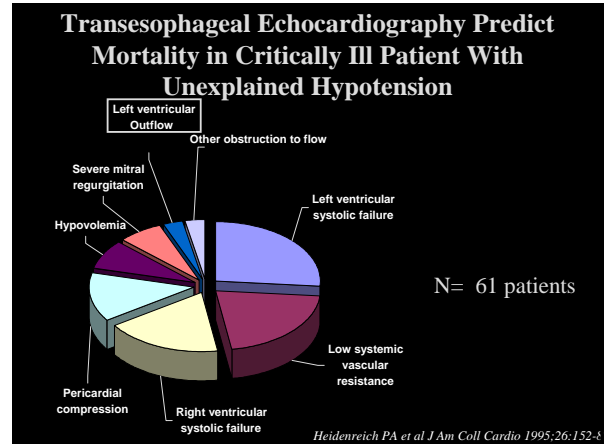
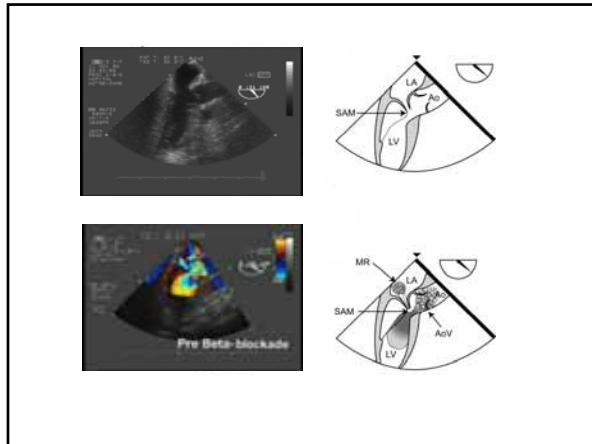


65 yo male admitted to the ICU with hypotension, fever and a cardiac murmur



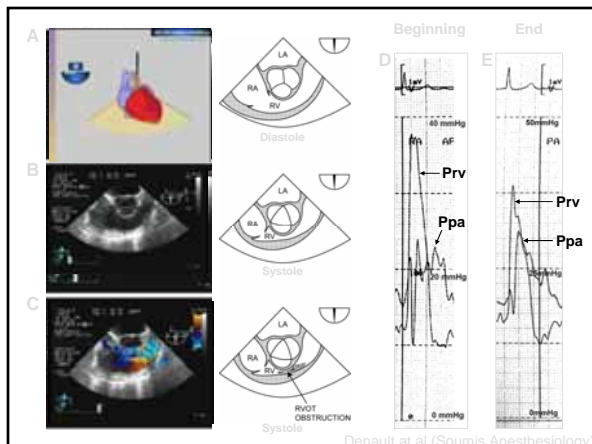
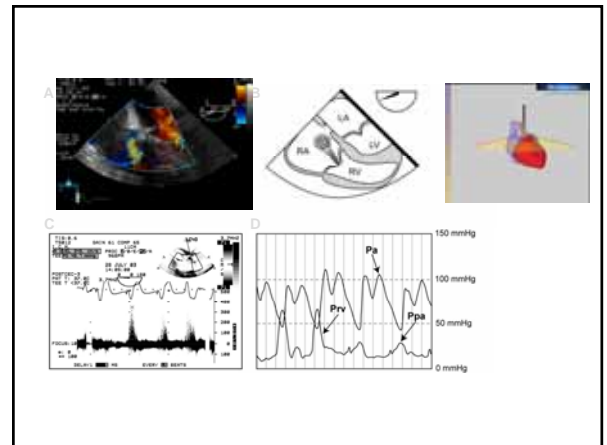
Souffle cardiaque et instabilité hémodynamique

- Souffle fonctionnel
- Régurgitation mitrale
 - Type I : dilatation septique: Rx de support
 - Type II: rupture et endocardite: Rx antibiotique
 - Type III: ischémique: Rx anti-ischémique
- Obstruction de la chambre de chasse du ventricule gauche



Instabilité hémodynamique

Patient de 75 ans
Retour sous CEC X 2
Sous BIA, dopamine et milrinone



- ### Sommaire postcharge
- Mesures de résistance ????
 - Plus important: TAM, PAPm et DC
 - Obstruction de la chambre de chasse gauche et droite chez patients avec HVG et HVD: inotropes contre-indiqués
 - Gauche: ÉTO
 - Droite: pression du VD et PAP
 - Meilleur indice de postcharge gauche= élastance artérielle
 - Meilleur indice pronostique = ratio TAM/PAPm