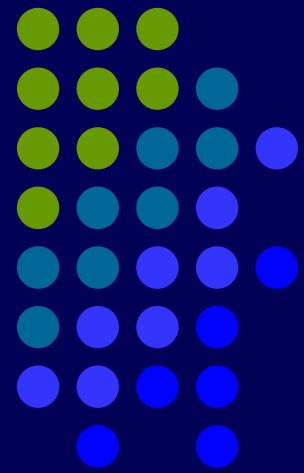
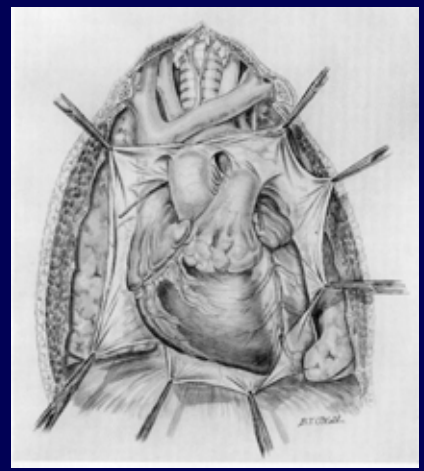
DE CARDIAQUE

Par Dominique Piquette
R5 - Soins intensifs

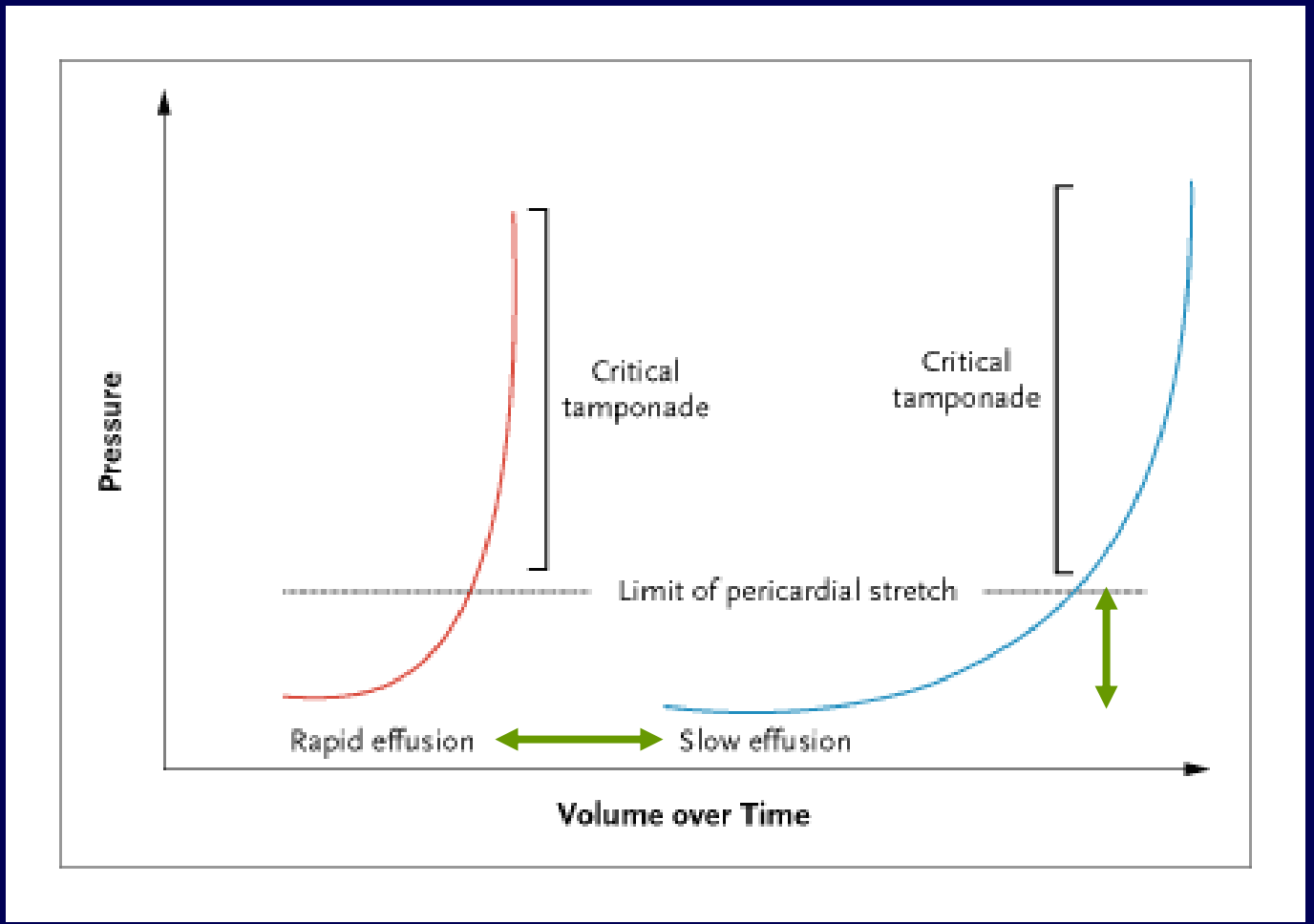


Plan

- Physiopathologie
- Physiopathologie
- Physiopathologie
- Clinique
- Diagnostic
- Traitement

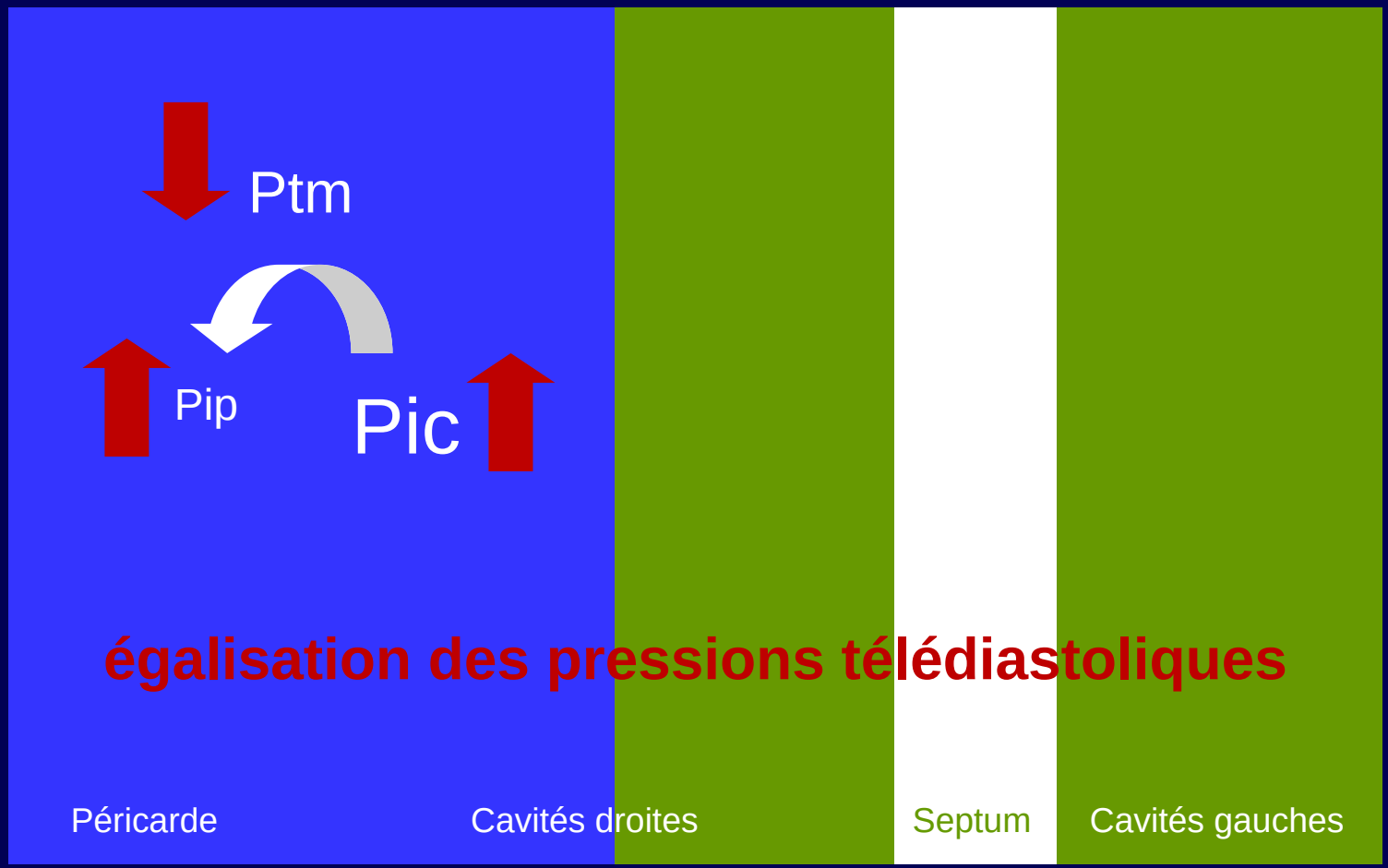


PHYSIOPATHOLOGIE : pression péricardique

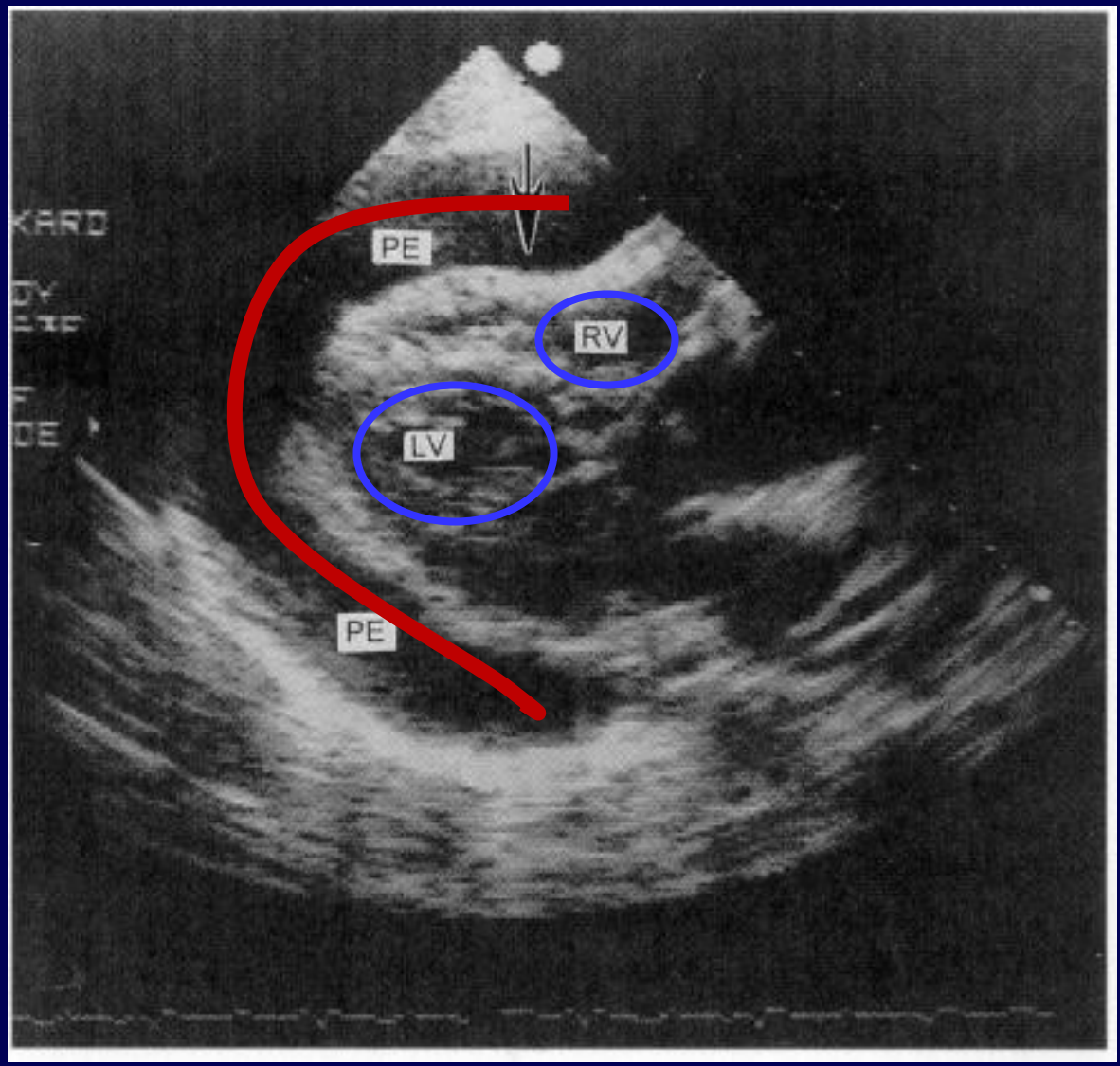


Spodick, NEJM, 2003.

PHYSIOPATHOLOGIE : pression transmurale

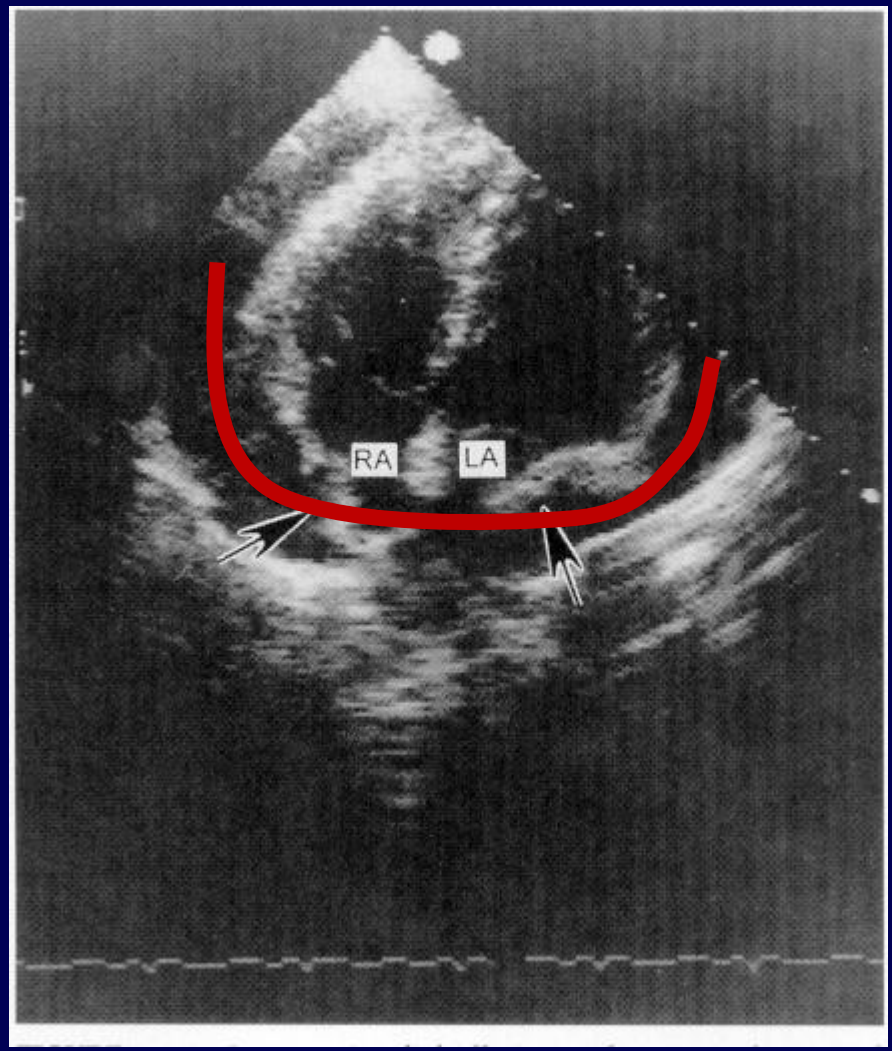


PHYSIOPATHOLOGIE : pression transmurale



Braunwald, 2001.

PHYSIOPATHOLOGIE : pression transmurale

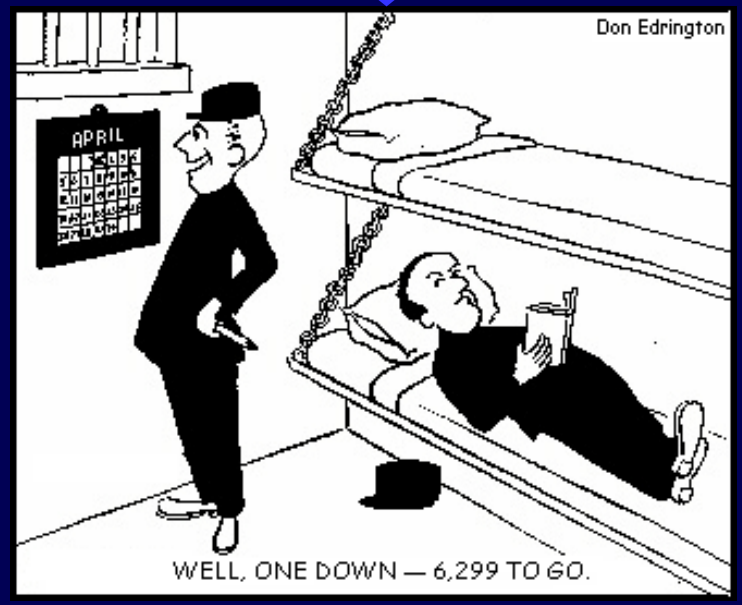


Braunwald, 2001.

PHYSIOPATHOLOGIE : fonction cycle cardiaque

péricarde

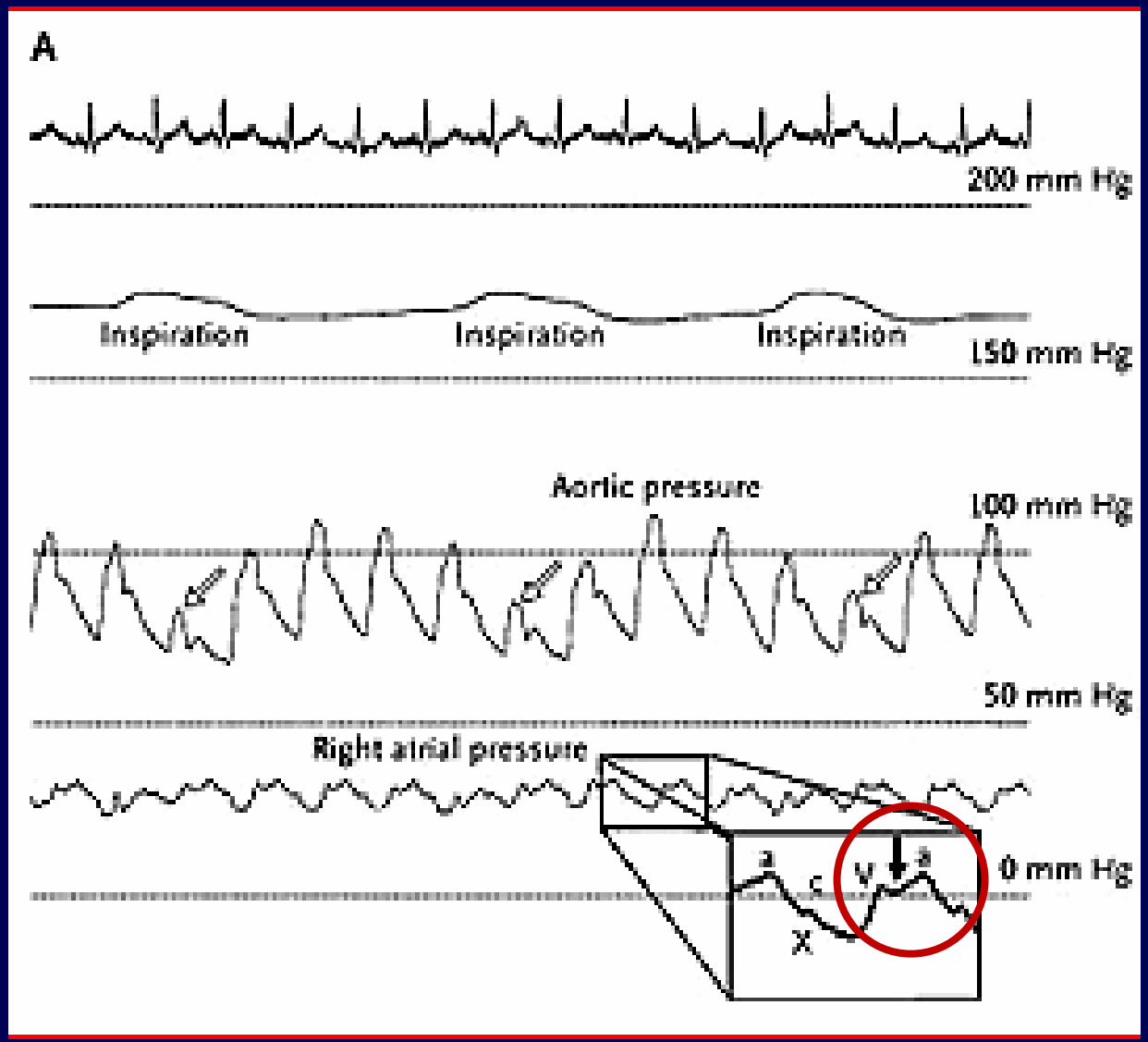
TAMPONNADE



PÉRICARDITE CONSTRICTIVE

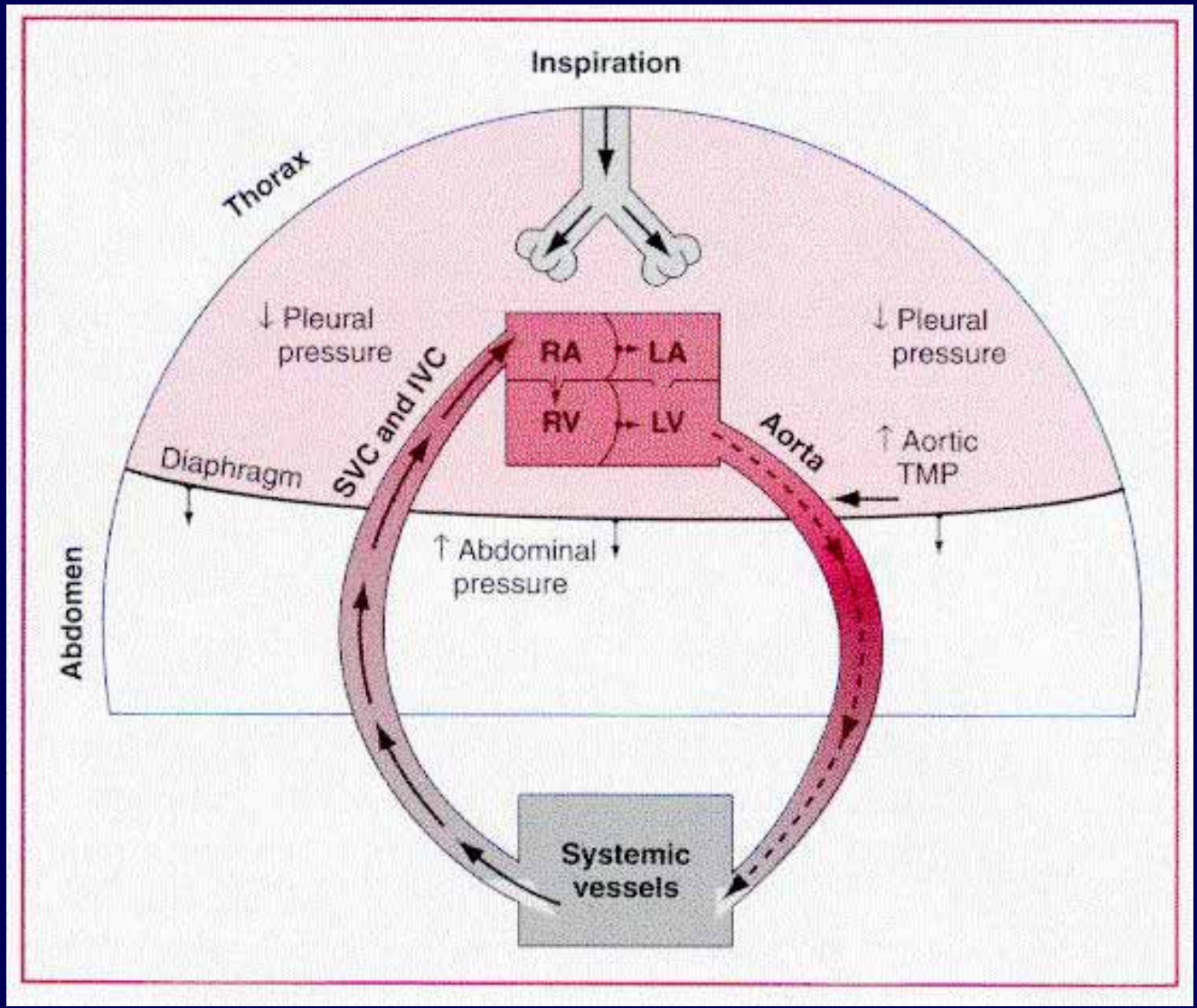
Épanchement péricardique

PHYSIOPATHOLOGIE : fonction cycle cardiaque



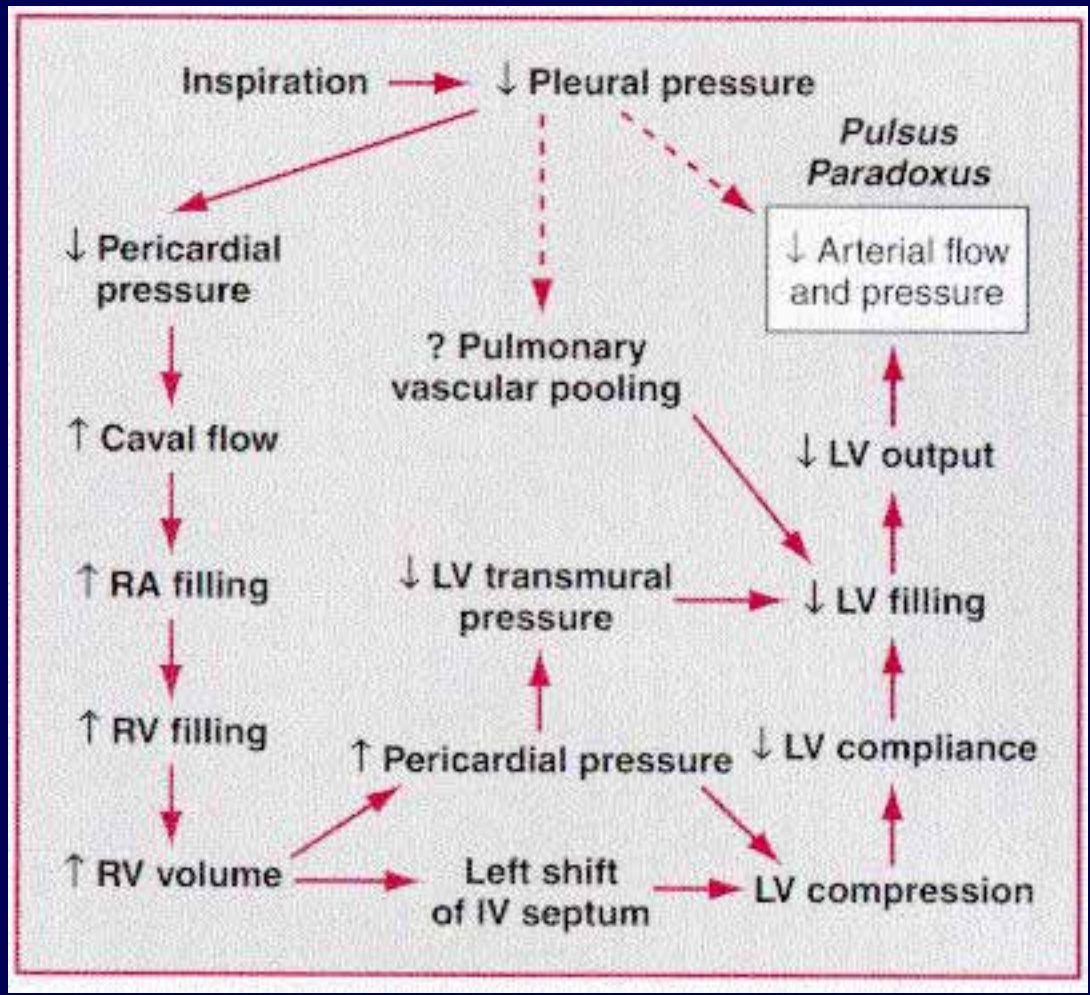
Uptodate 12.2

respiratoire



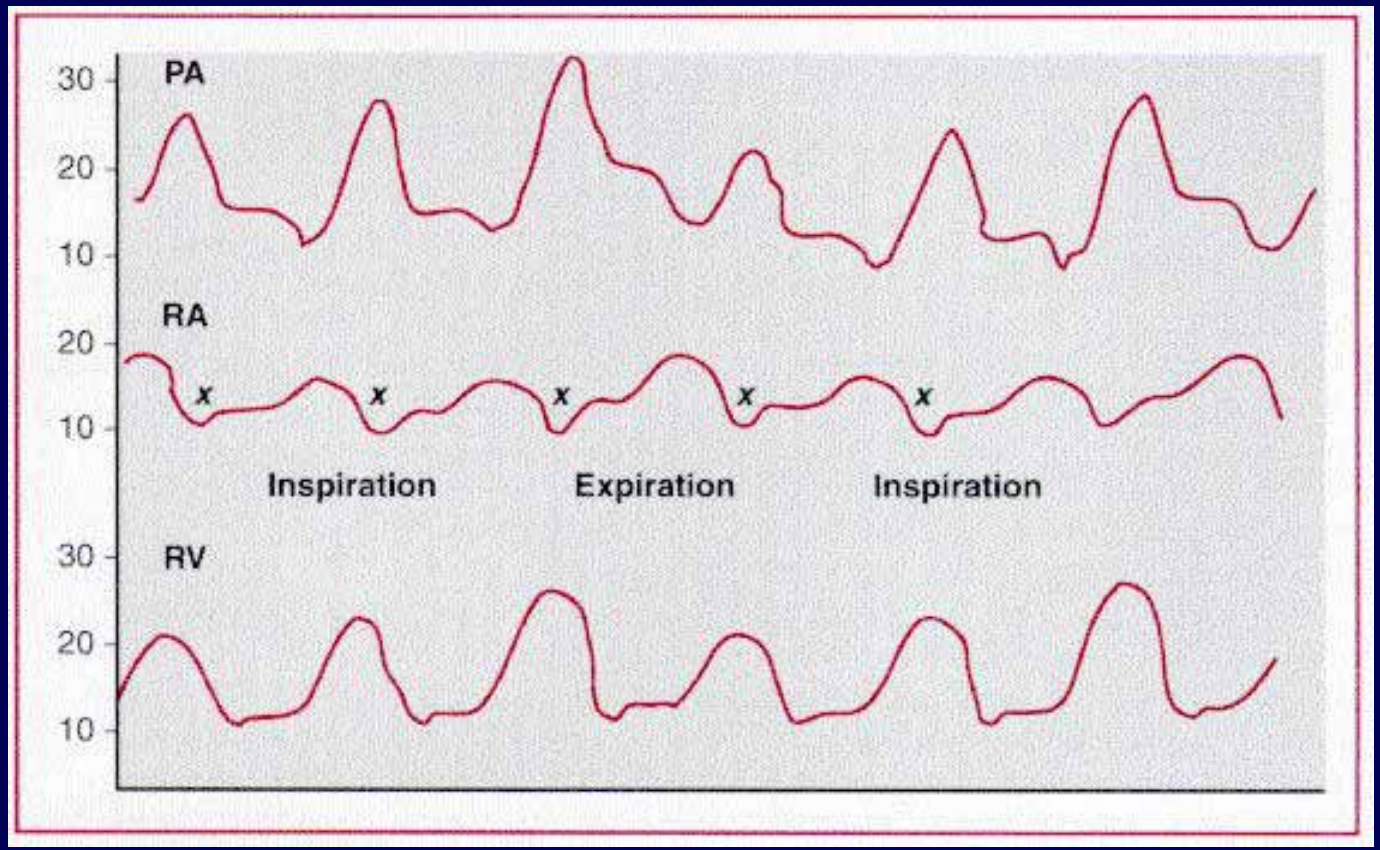
Braunwald, 2001.

fonction du cycle respiratoire



Braunwald, 2001.

fonction du cycle respiratoire

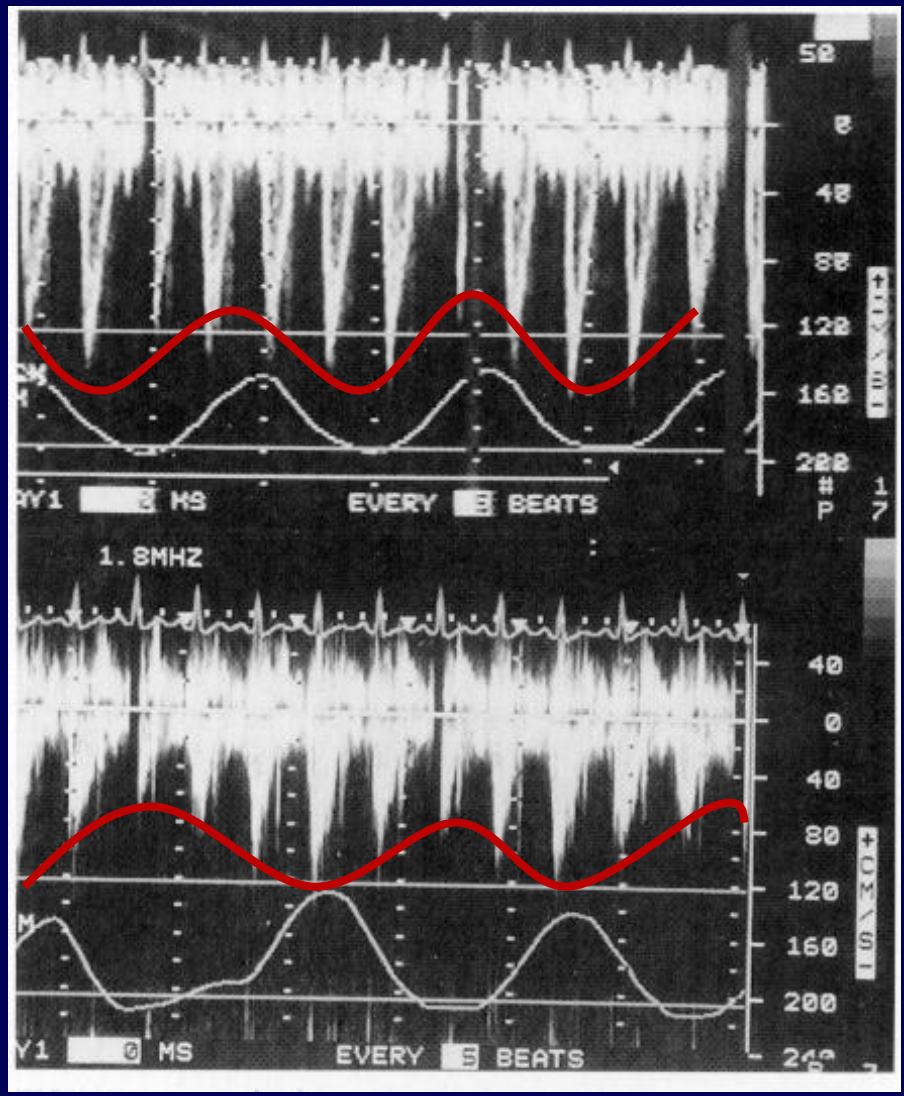


Braunwald, 2001.

fonction du cycle respiratoire

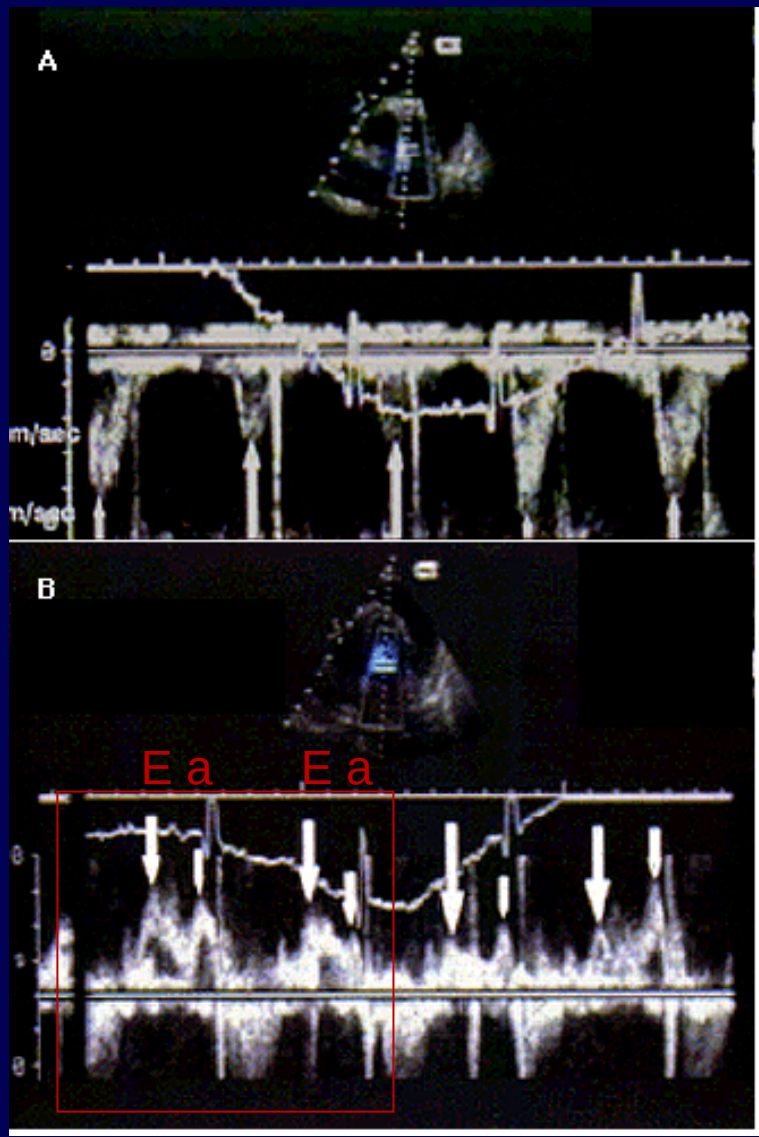
VG

VD



Braunwald, 2001.

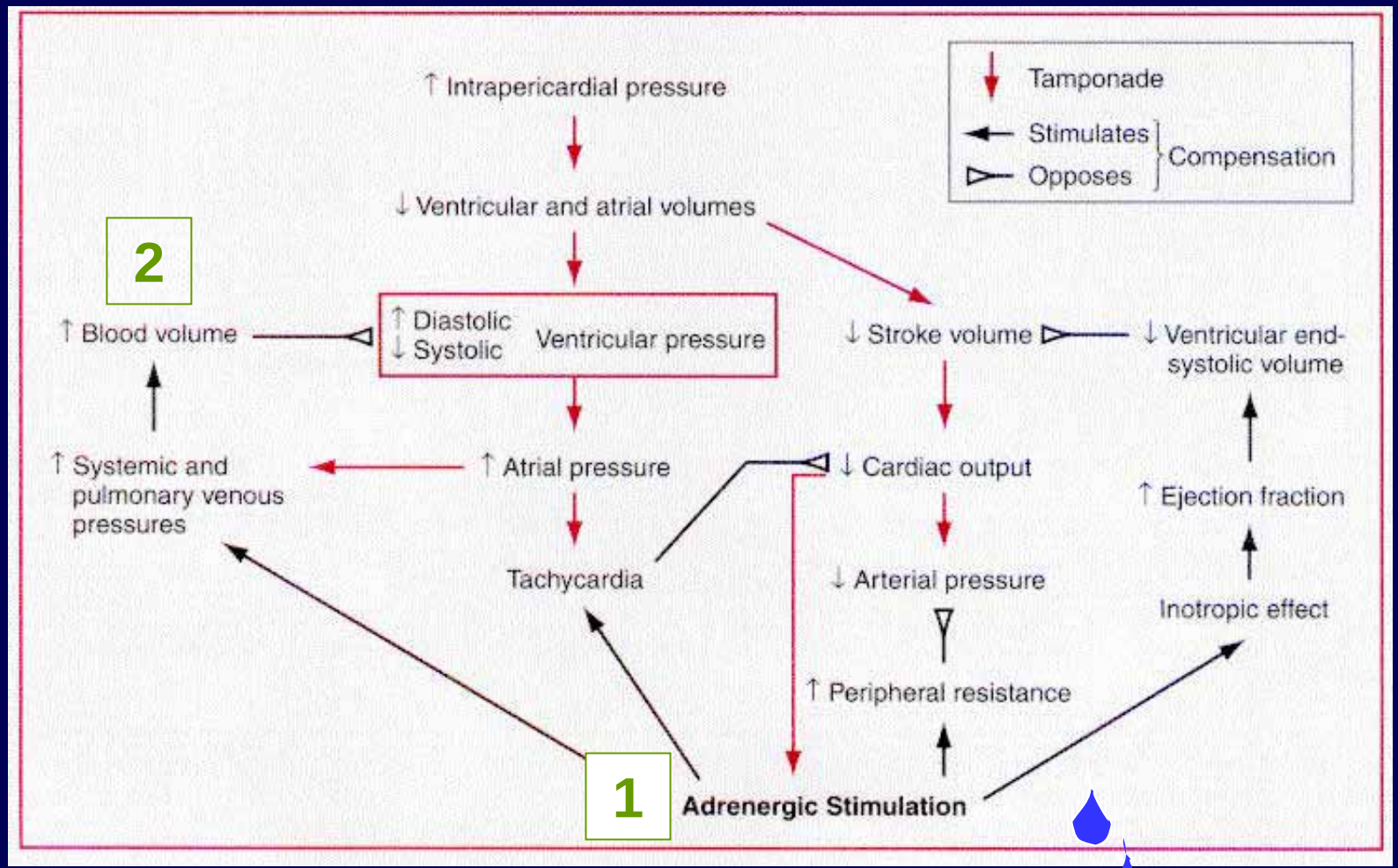
fonction du cycle respiratoire



Doppler echocardiogram in cardiac tamponade In cardiac tamponade, the Doppler echocardiogram shows respiratory variation of left sided Doppler flow signals. Drift in ECG baseline identifies respiration. Panel A is recorded from the left ventricular outflow tract; the arrows denote the peak forward velocity of each beat, demonstrating that respiration causes a change in velocity that exceeds 25 percent. Panel B is obtained from the mitral inflow; the large and small arrows are the E and A waves, respectively. The E and A waves change in amplitude with respect to each other within each beat (ie E>A or A>E) and to their analogues in neighboring beats. The pattern of mitral inflow and E/A ratio are similar to those seen with the major types of diastolic dysfunction.

Uptodate 12.2

compensation systémique



Braunwald, 2001.

CLINIQUE : suspicion

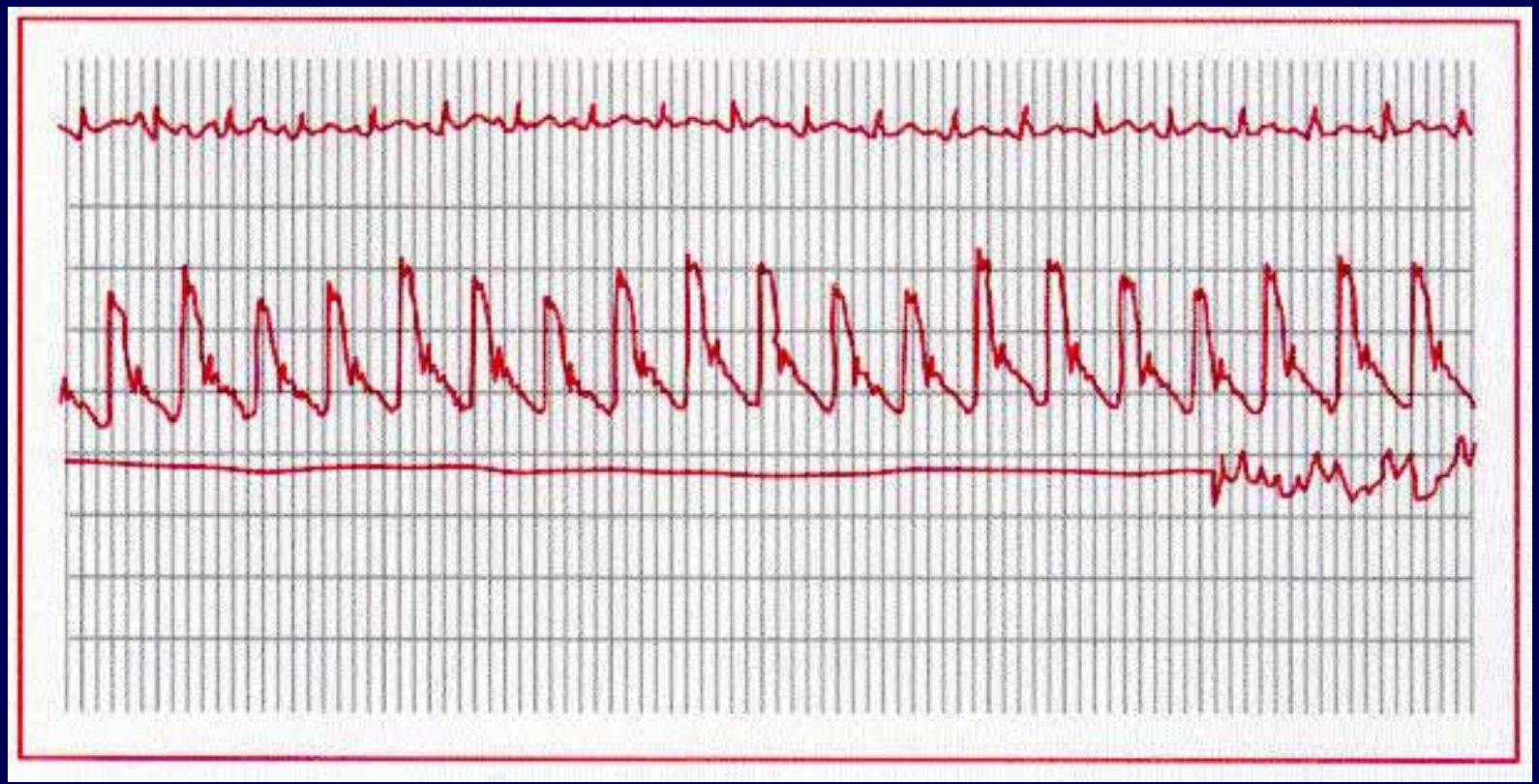
Case Series of Moderate-Large Pericardial Effusions

	Colombo, 1988 (N = 25)	Corey, 1993 (N = 53)	Sagrista, 2000 (N = 322)
Size of effusion, mm	>5	>10	>10
Tamponade, percent	44	NR	37
Etiologies, percent			
Idiopathic†	32	7	20 (9 percent chronic)
Neoplastic	36	23	13
Uremia	20	12	6
Iatrogenic	0	0	16
Post-acute myocardial infarction	8	0	8
Viral	0	14	0
Collagen vascular disease	0	12	5
Tuberculosis	0	0	2
Other	4	9	21

†Includes both acute and chronic pericardial effusions.
NR: not reported

Uptodate 12.2

manifestations physiques



Braunwald, 2001.

manifestations physiques

Table 1. Conditions Leading to the Absence of Diagnostic Pulsus Paradoxus in Cardiac Tamponade.

Condition	Consequence
Extreme hypotension, as in shock, and even severe tamponade	May make respiration-induced pressure changes unmeasurable
Acute left ventricular myocardial infarction with occasional effusion causing tamponade	—
Pericardial adhesions, especially over the right heart	Volume changes impeded
Local (usually postsurgical) pericardial adhesions	Local cardiac compression by loculated fluid
Pulmonary vein and left ventricular diastolic pressures and left ventricular stiffness markedly exceed those of the right ventricle*	Reduced effects of respiration on right-heart filling
Right ventricular hypertrophy without pulmonary hypertension	Causes right-sided resistance to the effects of breathing
Severe aortic regurgitation, with or without severe left ventricular dysfunction	Produces sufficient regurgitant flow to damp down respiratory fluctuations
Atrial septal defects	Increased inspiratory venous return balanced by shunting to the left atrium
Some cases of low-pressure tamponade	Makes marked respiratory changes in blood pressure diagnostically insignificant

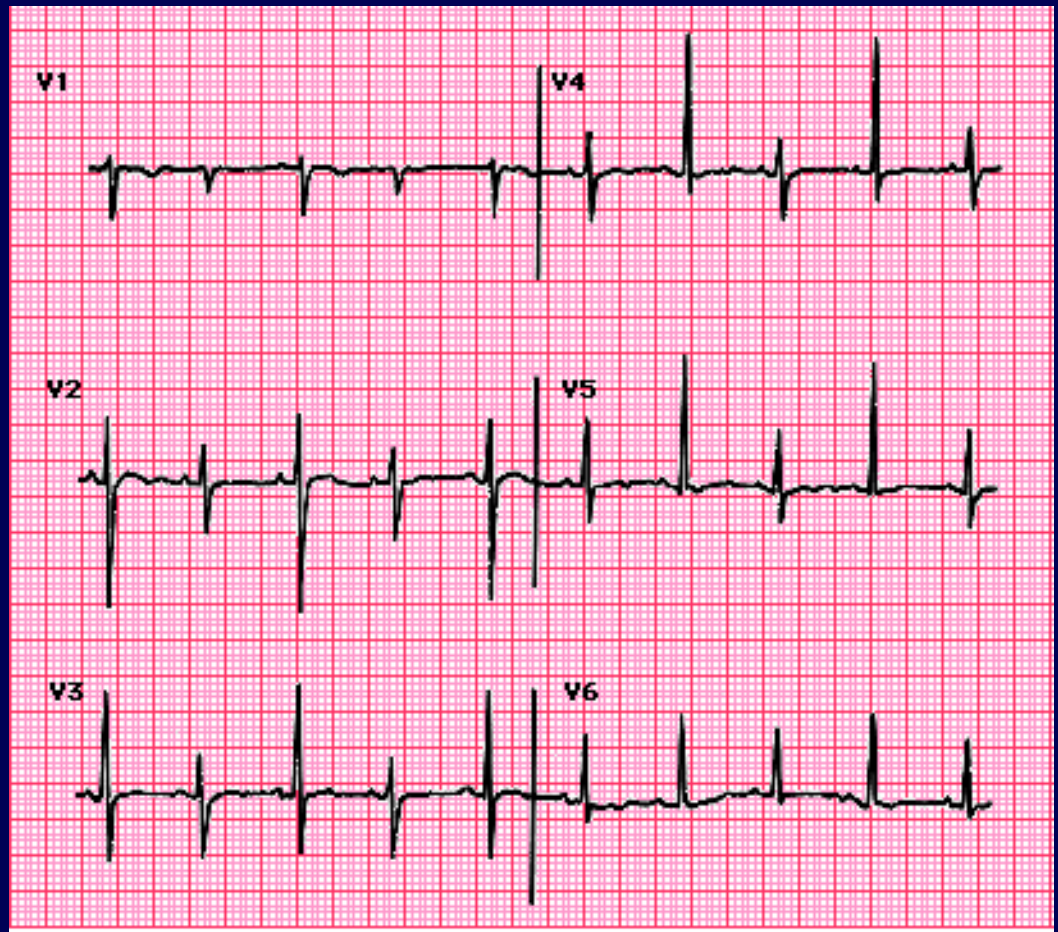
* In patients with marked left ventricular hypertrophy or severe left-sided heart failure, pericardial pressure effectively equilibrates only with right heart pressures, a form of right ventricular tamponade, with the much less compliant left ventricle resisting phasically changing pericardial pressure. Under these conditions, respiratory changes cannot alternately favor right- and left-sided filling.

Uptodate 12.2

CLINIQUE : radiographie

Braunwald, 2001.

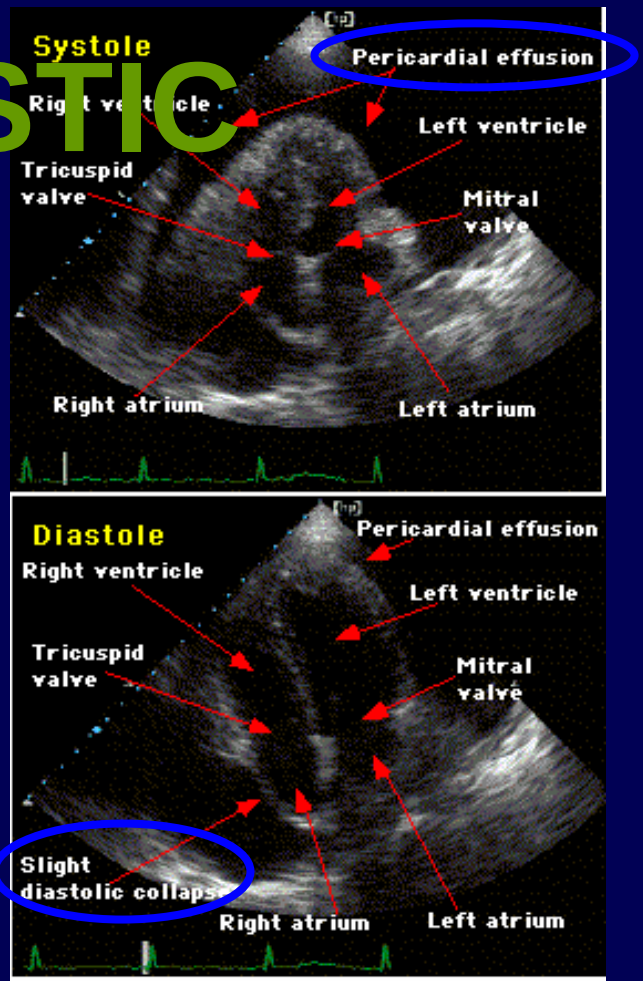
CLINIQUE : ECG



Electrical alternans Sinus tachycardia with electrical alternans which is characterized by beat-to-beat alternation in the QRS appearance (best seen in leads V2 to V4). These findings are strongly suggestive of pericardial effusion, usually with tamponade. The alternating ECG pattern is related to back-and-forth swinging motion of the heart in the pericardial fluid. Courtesy of Ary Goldberger, MD.

Uptodate 12.2

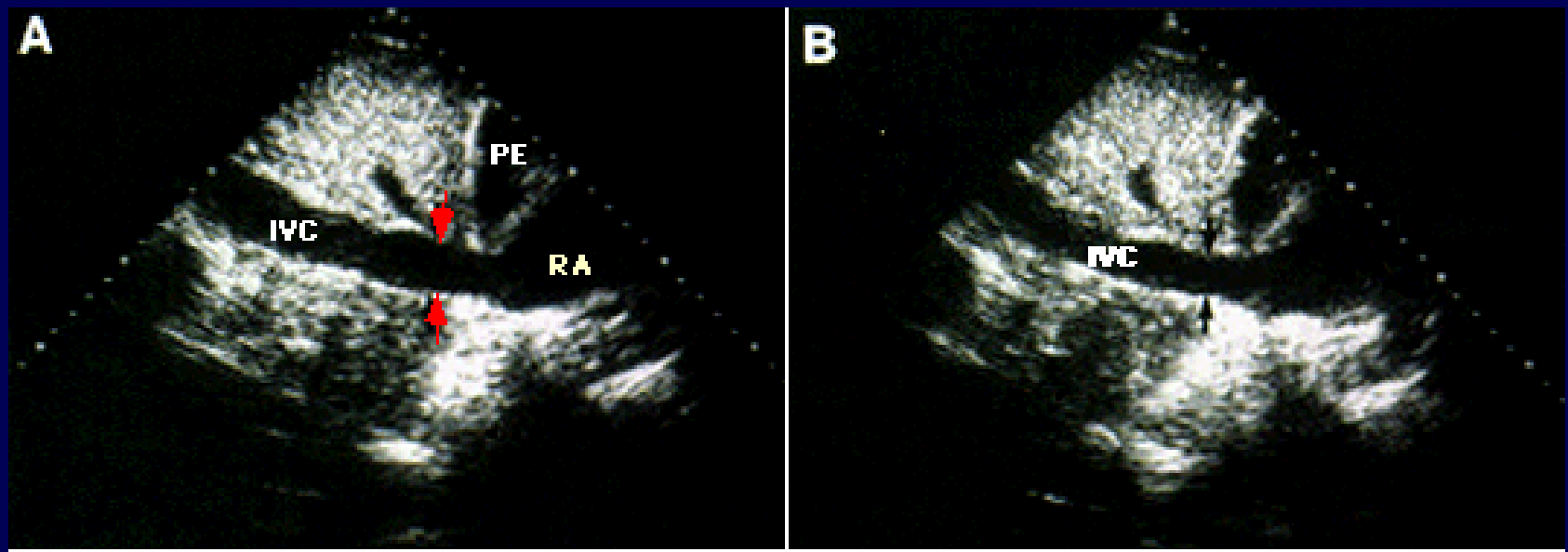
DIAGNOSTIC



Pericardial effusion Apical 4 chamber view from a 2-D echocardiogram shows a large pericardial effusion surrounding the heart. The heart has a swinging motion during the cardiac cycle and there is slight compression of the right atrium early in diastole, suggesting early tamponade. (Provided by Thomas Binder, MD, et al. Interactive Echocardiography. A Clinical Atlas. Futura, 1997).

Uptodate 12.2

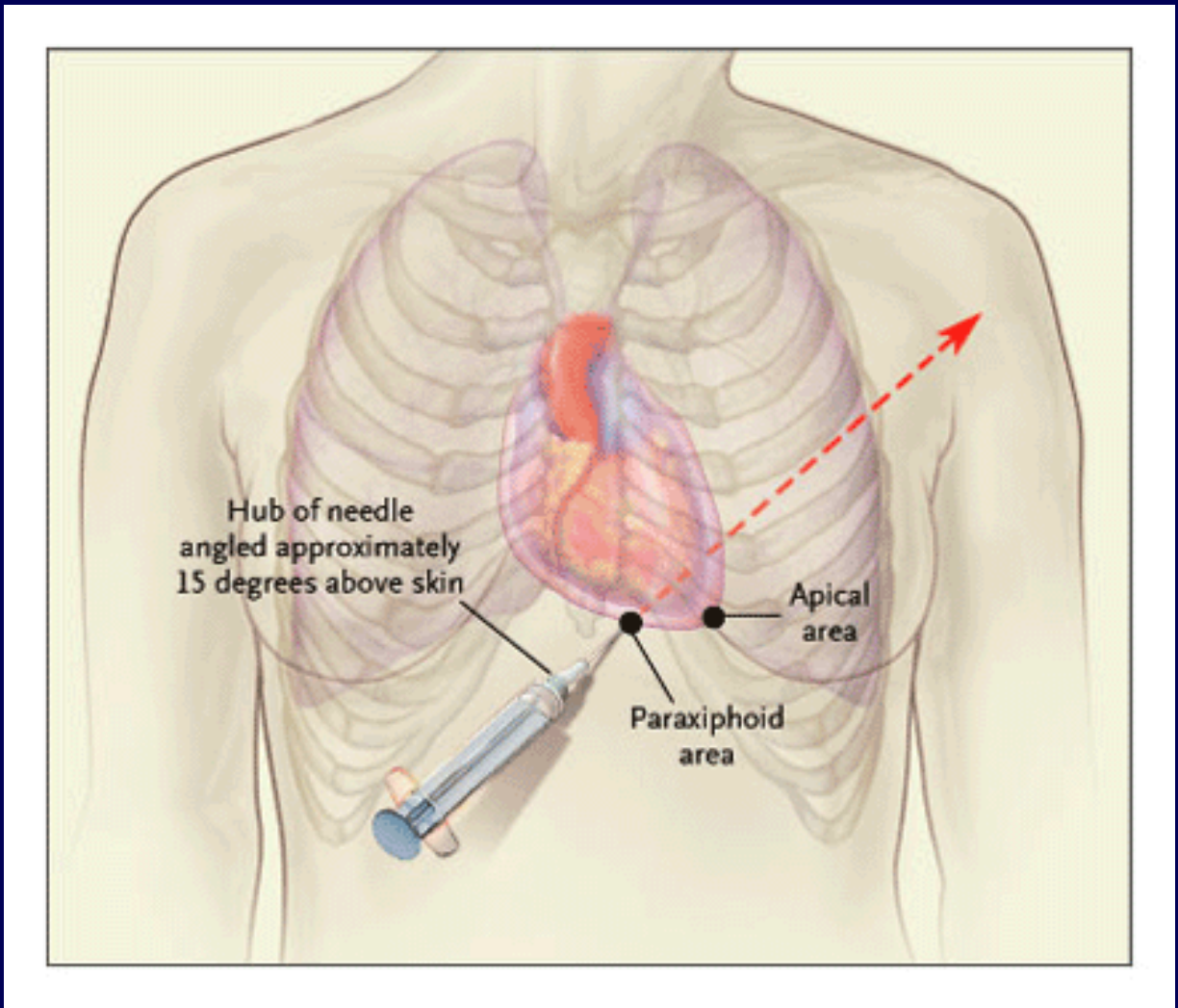
DIAGNOSTIC



Inferior vena cava during respiration in tamponade Panel A: The subcostal view of the inferior vena cava (IVC) in a patient with tamponade. The IVC is plethoric measuring over 20 mm in diameter. Panel B: During inspiration, the IVC diameter fails to decrease. There is a large pericardial effusion (PE) surrounding the right atrium (RA).

Uptodate 12.2

TRAITEMENTS



Spodick, NEJM, 2003.