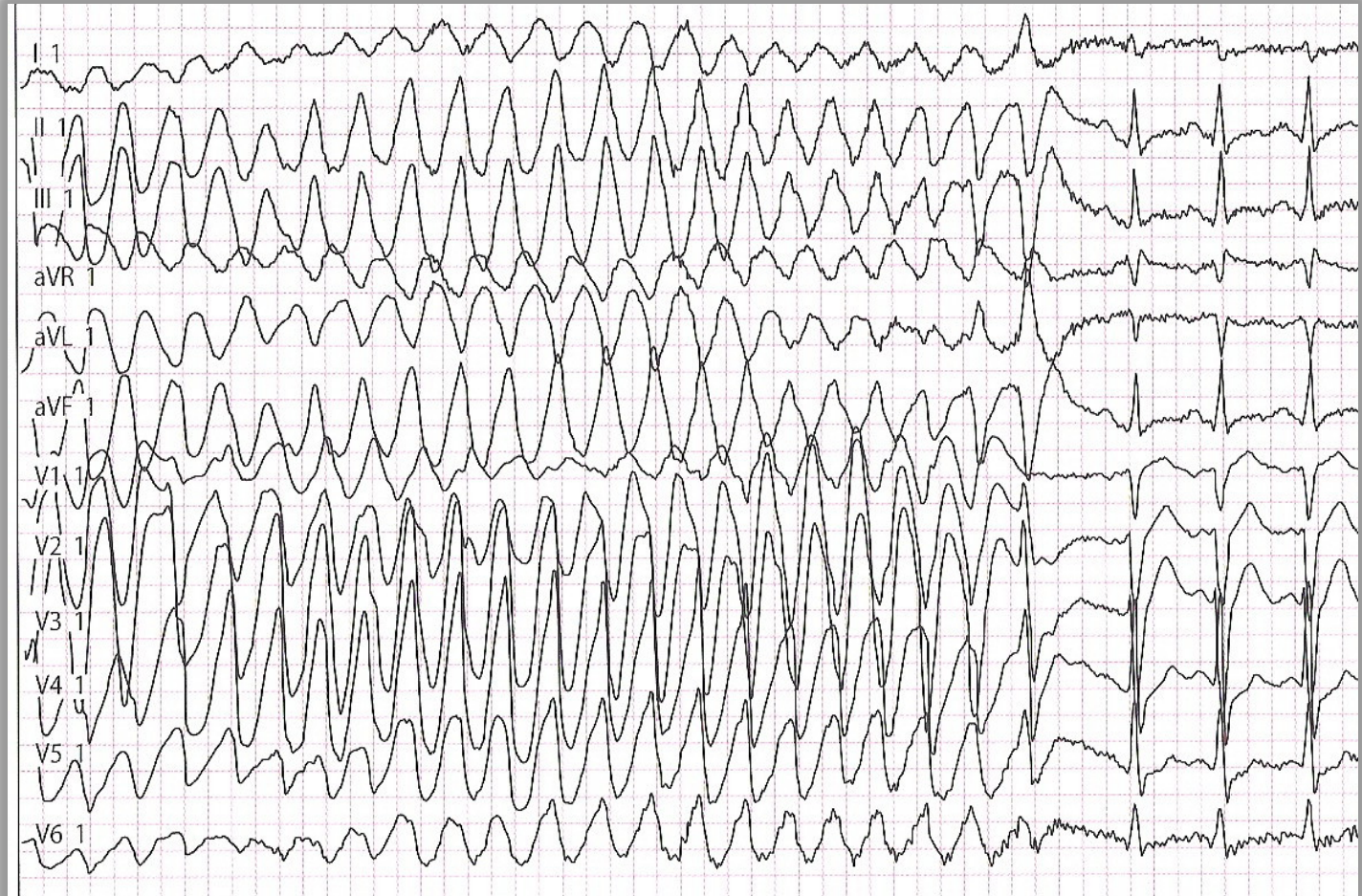


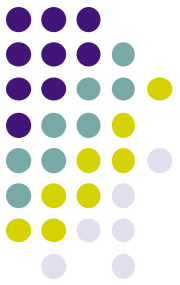
Polymorphic VT



**Changing
amplitude and
morphology of
QRS
complexes**



Irregular WCT

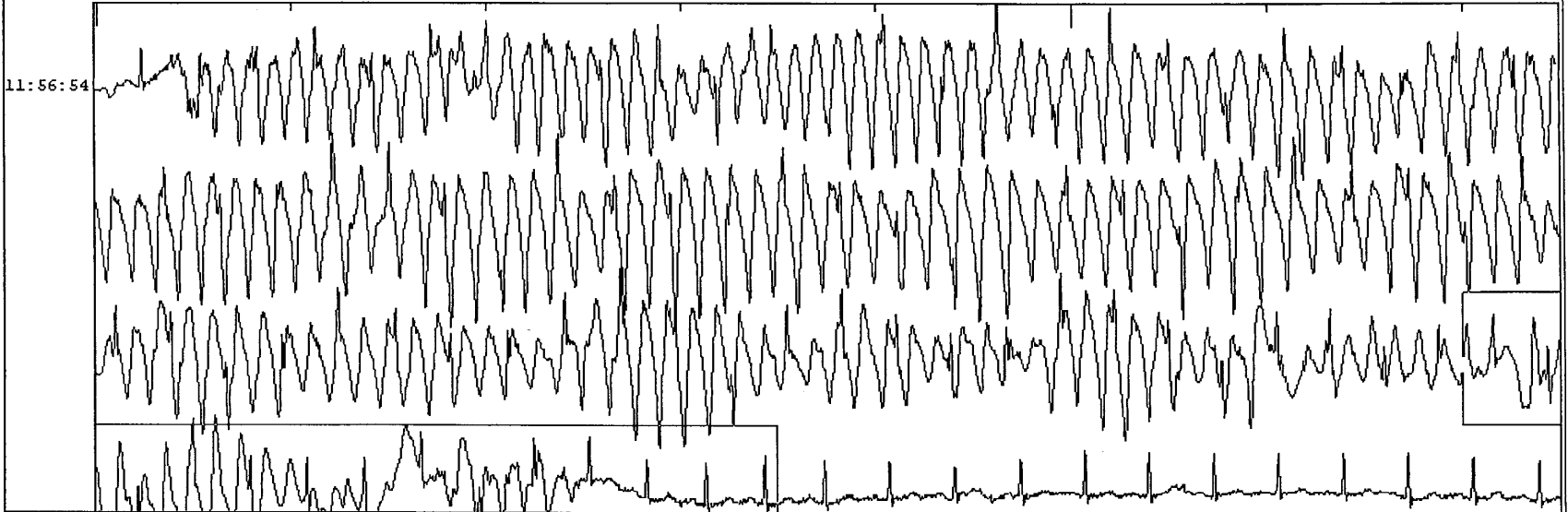


Polymorphic VT is
easy to recognize

Major challenge is to
differentiate **AF with
BBB** from
preexcited AF

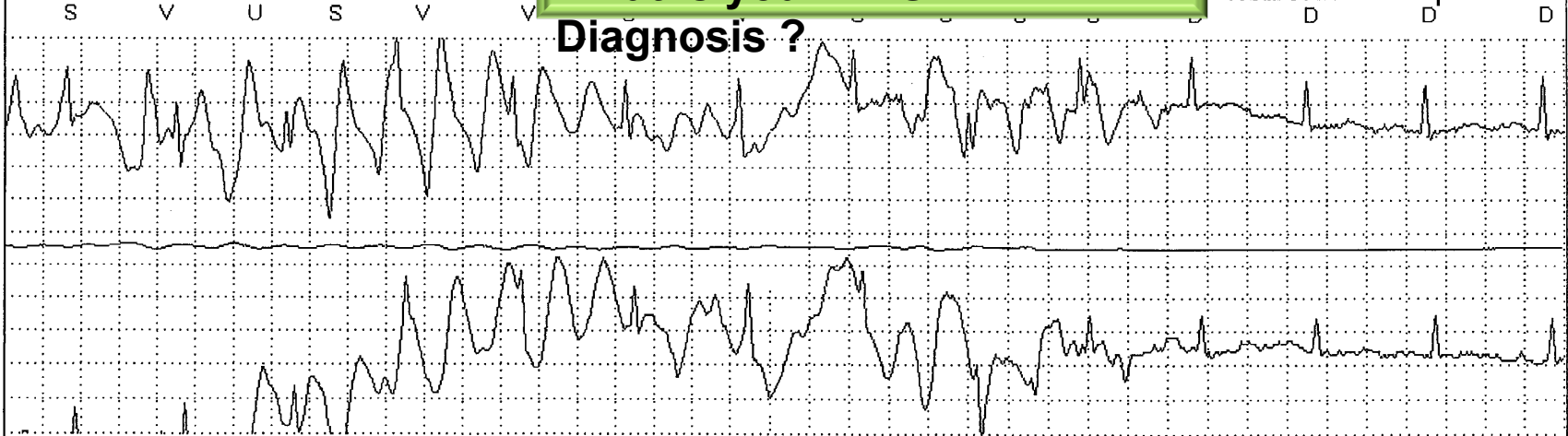
AV nodal blockers
(digoxin, verapamil, β -
blockers, adenosine) may
accelerate ventricular
response & induce VF in
preexcited AF

11:57:38



11:57:38 SEARCH STRIP

Heart Rate: 134 bpm



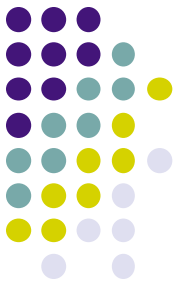
CLINICAL CONSEQUENCES
OF ELECTROCARDIOGRAPHIC ARTIFACT
MIMICKING VENTRICULAR
TACHYCARDIA

BRADLEY P. KNIGHT, M.D., FRANK PELOSI, M.D.,
GREGORY F. MICHAUD, M.D.,
S. ADAM STRICKBERGER, M.D.,
AND FRED MORADY, M.D.

NEJM Oct 1999

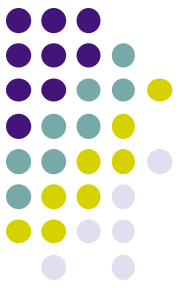
12 patients received unnecessary intervention for VT (drugs, cardioversion, cardiac cath., EP study, pacemaker, ICD)

Artifacts mimicking **monomorphic VT** in 5 & **polymorphic VT** in 7



ECG artifacts mimicking VT / VF

Clues to ECG diagnosis



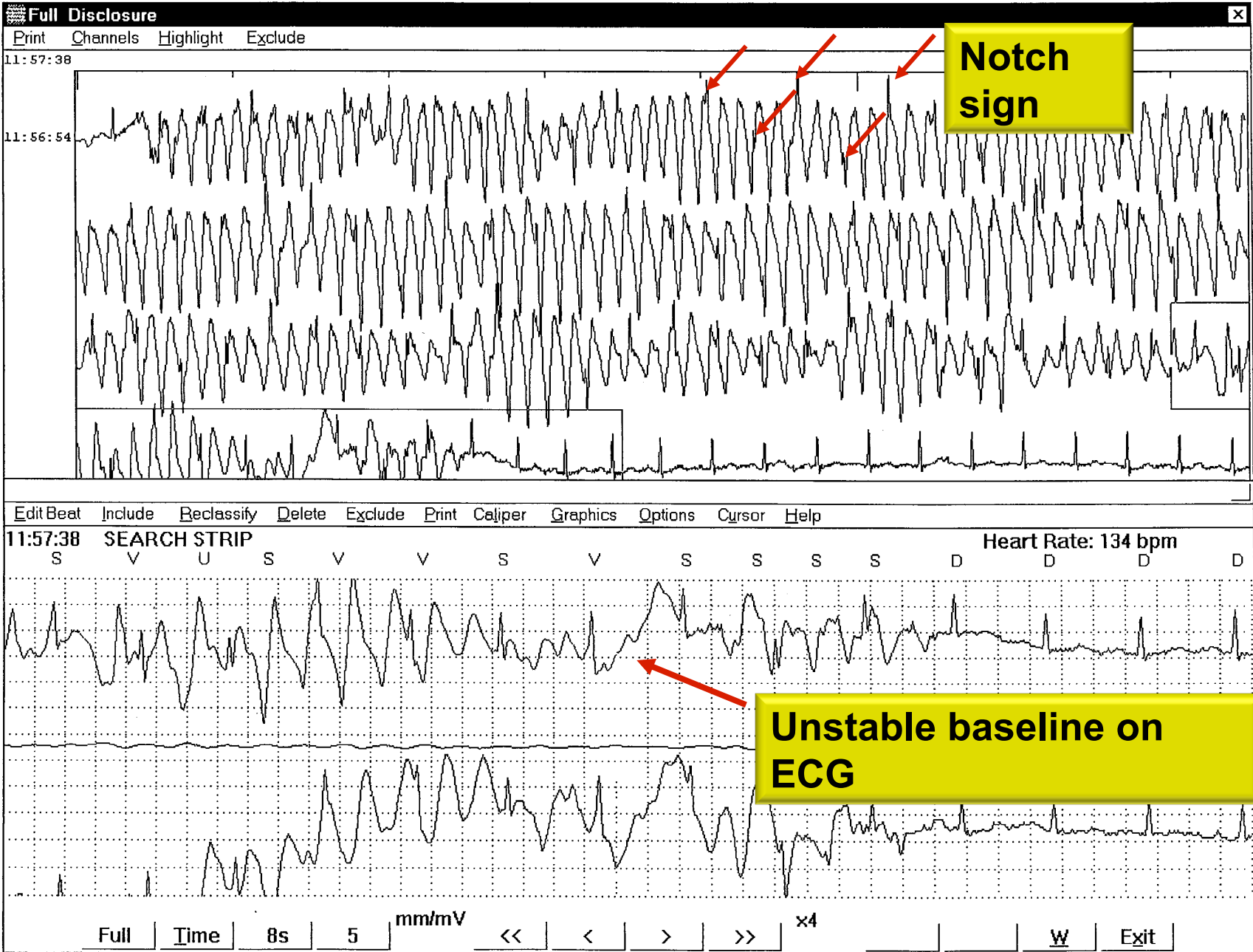
Normal QRS complexes within the artifact (the notch sign)

Unstable baseline

Association with body movement (eg hand tremor)

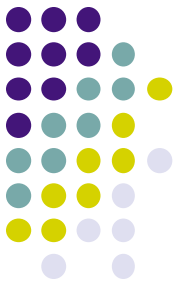
Patient asymptomatic

No haemodynamic disturbance (feel the pulse & check BP)



Approach to ECG Interpretation of WCT

WCT



Irregular WCT

- Polymorphic VT
- AF with BBB
- Preexcited AF
- *ECG artifacts*

If AF
- treat as preexcited AF if not typical of RBBB or LBBB or in doubt

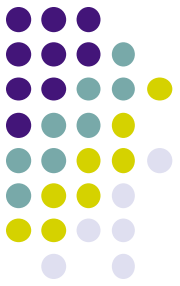
Regular WCT

- VT
- SVT BBB
- Antidromic SVT
- *ECG artifacts*

Treat as VT if in doubt

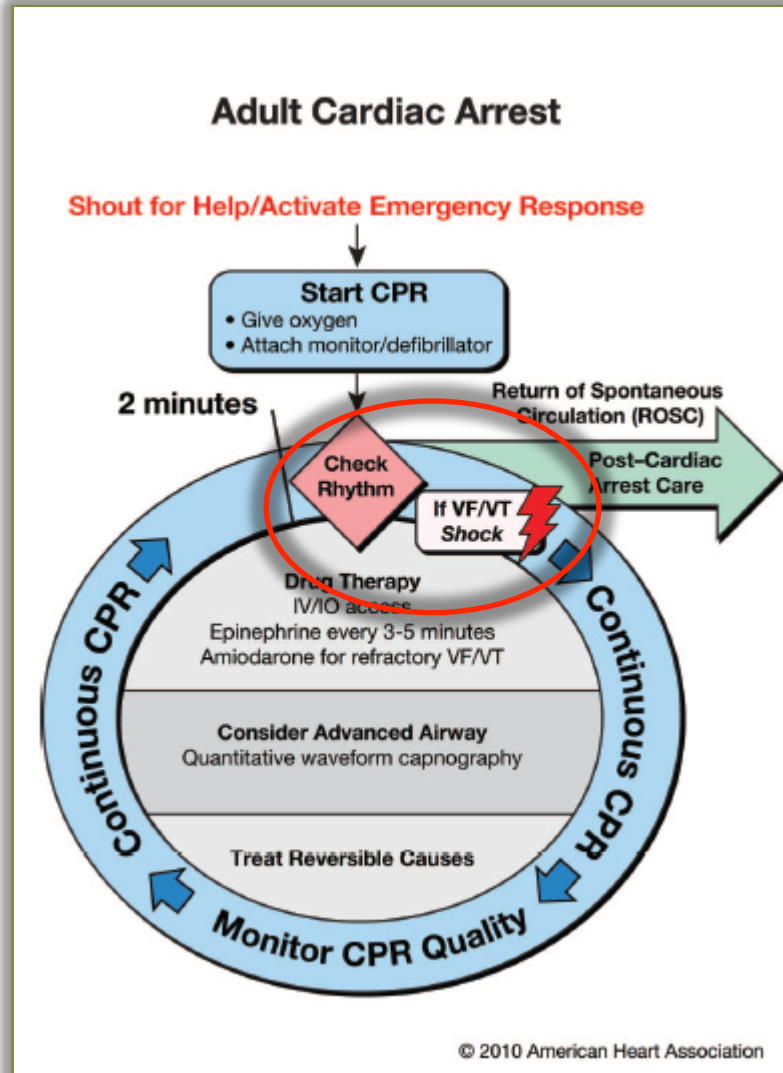
When should we defibrillate a WCT ?

Treatment of WCT - New Resuscitation Guidelines 2010



Initial Defibrillation Energy (biphasic shock)

- Manufacturer's recommended energy dose (120-200J), or
- Maximum dose





Adult Tachycardia (With Pulse)

**ACLS
Guidelines
2010**

1
Assess appropriateness for clinical condition.
Heart rate typically $\geq 150/\text{min}$ if tachyarrhythmia.

2
Identify and treat underlying cause

- Maintain patent airway; assist breathing as necessary
- Oxygen (if hypoxemic)
- Cardiac monitor to identify rhythm; monitor blood pressure and oximetry

3
Persistent tachyarrhythmia causing:

- Hypotension?
- Acutely altered mental status?
- Signs of shock?
- Ischemic chest discomfort?
- Acute heart failure?

4
Synchronized cardioversion

- Consider sedation
- If regular narrow complex, consider adenosine

5
Wide QRS? ≥ 0.12 second

6

- IV access and 12-lead ECG if available
- Consider adenosine only if regular and monomorphic
- Consider antiarrhythmic infusion
- Consider expert consultation

7

- IV access and 12-lead ECG if available
- Vagal maneuvers
- Adenosine (if regular)
- β -Blocker or calcium channel blocker
- Consider expert consultation



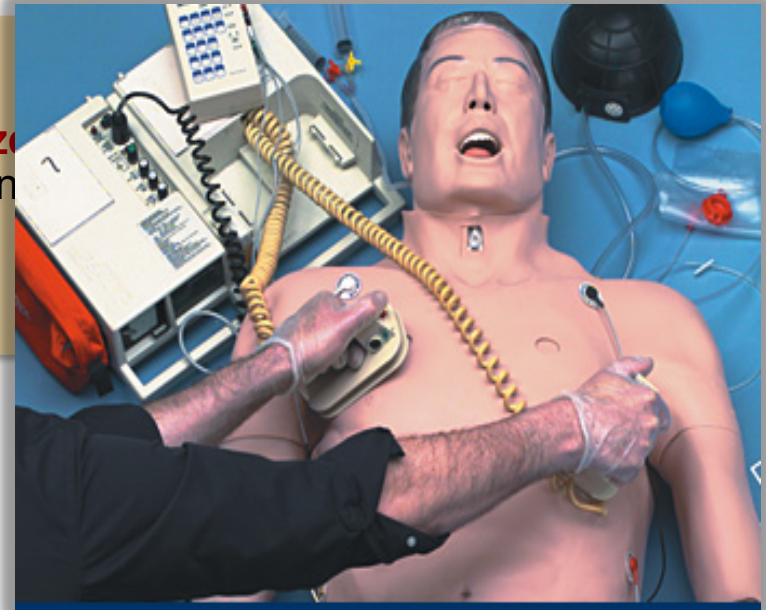
Defibrillation vs Cardioversion

Defibrillation

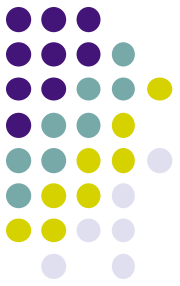
- Delivery of **unsynchronized** energy for treatment of cardiac arrhythmias
 - eg. VF / pulseless VT / VT during which QRS complexes difficult to identify

Cardioversion

- Delivery of energy **synchronized** with QRS complex for treatment of cardiac arrhythmias



Elective cardioversion - clinical considerations

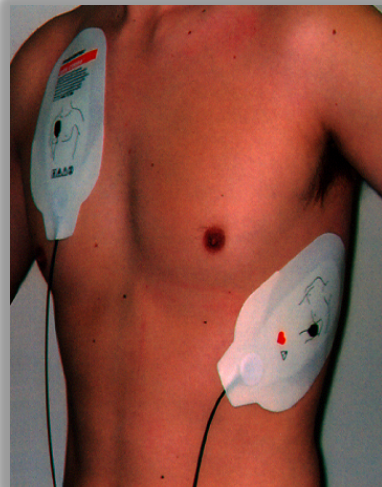


**Medical facility
equipped with
resuscitation
equipments**

**Trained personnel
familiar with
airway
management &
resuscitation
techniques**

**Proper sedation
(eg. dormicum +/-
fentanyl)**

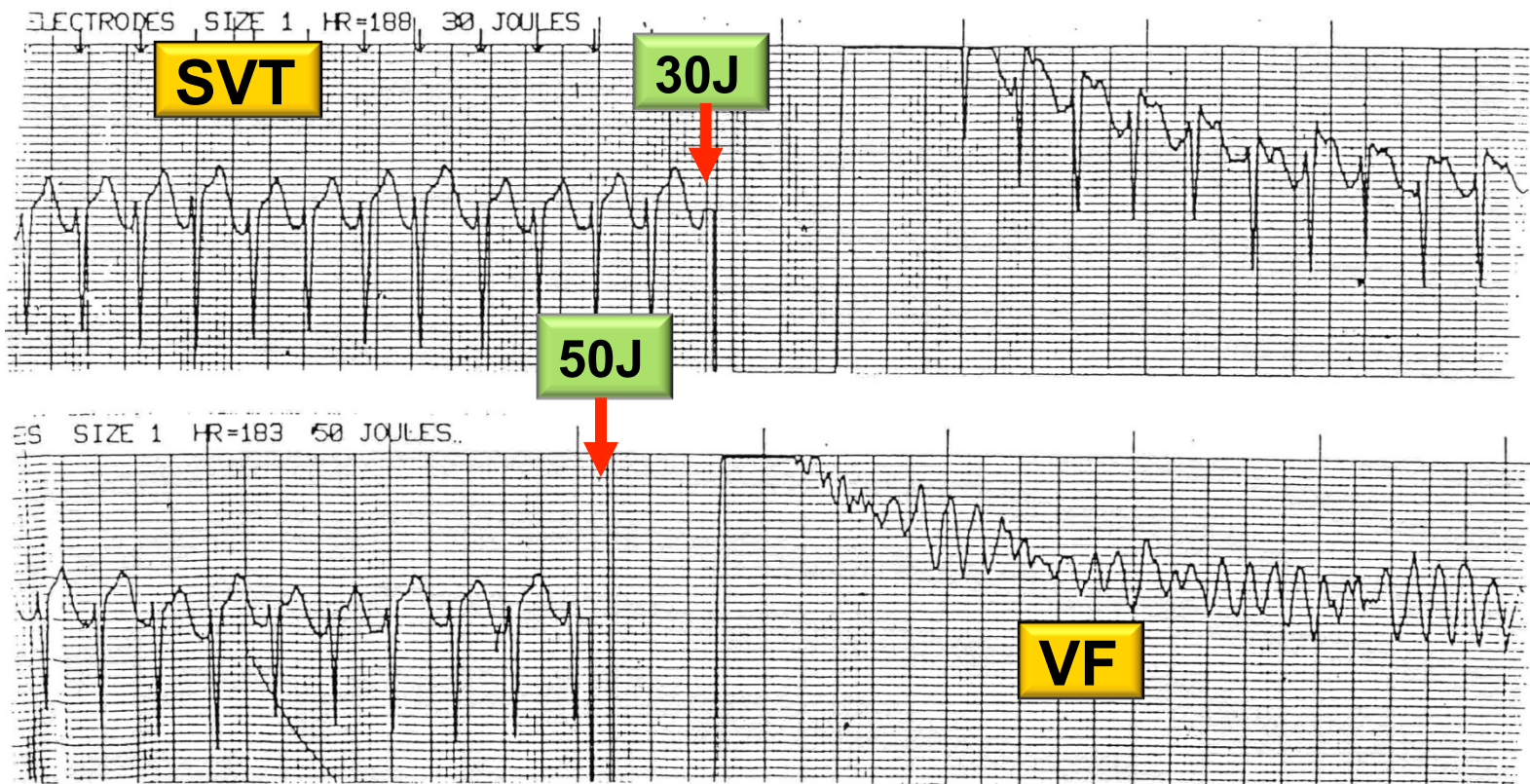
**Using paddles or
self-adhesive
electrode pads**



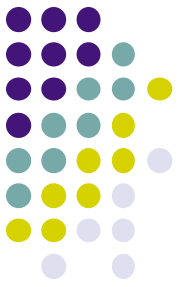
Importance of synchronization in cardioversion



A case of iatrogenic VF due to non-synchronized electrical cardioversion



Initial energy dose (biphasic waveform) for electrical cardioversion



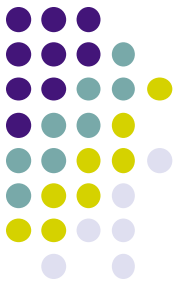
NCT

- AF : **120-200J**
- Atrial Flutter / PSVT : **50-100J**

WCT

- Monomorphic VT : **100J**
- Polymorphic VT : **Treat as VF**
(defibrillation)

Position of defibrillation electrodes



Antero-lateral vs antero-posterior positions

Remove medication patches and wipe the area before attaching the electrode pads.

Remove some hair if necessary for hairy chest

