Case History No 2

Charite Hospital, Berlin, 23rd May 2006

Intravascular Optimisation Following a Simple Algorithm Oesophageal Doppler Monitoring

An 80 year old patient was admitted for a coronary artery bypass graft, the patient was otherwise relatively healthy, ASA II with an ejection fraction of 70%.

Following induction of anaesthesia a DP 240 oesophageal Doppler probe was inserted orally and the descending aortic waveform located, probe insertion and signal acquisition took approximately 1 minute.

Screenshot 1 taken shortly after induction of anaesthesia shows an FTc 323ms, (Flow Time Corrected) below the normal range of 330 to 360ms, indicating possible hypovolaemia. Stroke volume at 77 ml is reasonable, however a heart rate of 60 gives a cardiac index (CI) of 2.3 l/m/m^2.

200ml of colloid was administered over 3–5 minutes. A positive response would be indicated by an increase in stroke volume of greater than 10%, suggesting that further colloid fluid challenges could be given to optimise the intravascular volume.

Screenshot 2 taken 5 minutes later shows a significant 14 ml (19%) increase in stroke volume, together with an increase in FTc, CI has increased from 2.3 to 2.7 l/min/m^2, all indicating more fluid could be safely given to Stroke Volume optimise this patient.

More colloid was given in accordance with the stroke volume optimisation algorithm until SV increases were less than 10%.

Screenshot 1: Post Induction
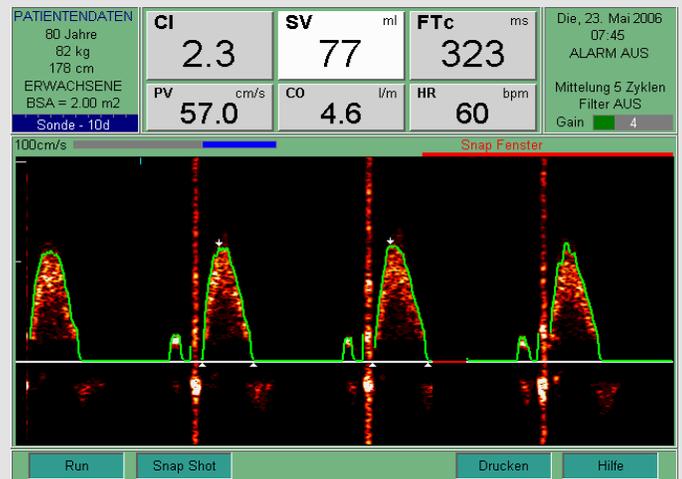
Screenshot 2: After first fluid challenge
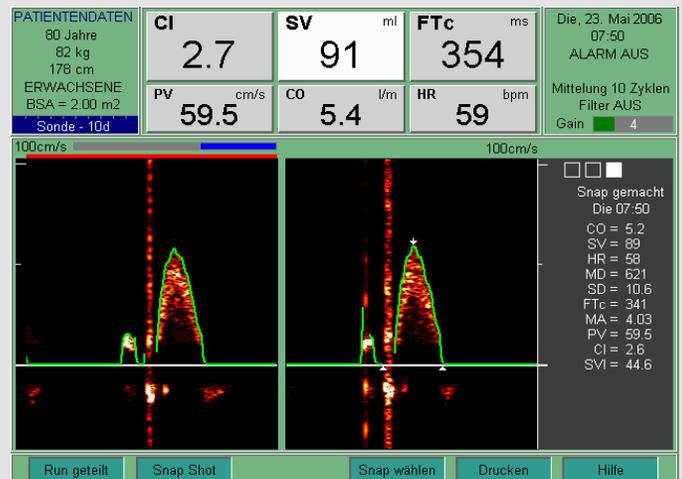
Screenshot 3 was taken shortly before the patient was put on bypass , it shows the Stroke Volume has increased to 115 ml, FTC is 387ms and CI is 3.5 l/m/m^2.

Comment

This case clearly demonstrates that the combination of the CardioQ and a simple fluid algorithm can safely be used to manage the volume status of patients undergoing major surgery, including coronary artery bypass surgery.

Screenshot 3: Stroke volume optimised patient

PATIENTENDATEN	CI	SV	ml	FTc	ms	Die, 23. Mai 2006
80 Jahre	3.5	115		387		08:46
82 kg						ALARM AUS
178 cm	PV	cm/s	CO	l/m	HR	bpm	Mittelung 3 Zyklen
ERWACHSENE	66.5	7.0		61		Filter AUS
BSA = 2.00 m2						Gain 5
Sonde - 10d						

100cm/s — Snap Fenster

Run | Snap Shot | Drucken | Hilfe