

A “Broken Heart” syndrome case after cesarean delivery. Prevention and risk assessment.

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A 35-year-old woman in the fortieth week of her first pregnancy was admitted into our Department for terminal pregnancy.

She underwent cesarian delivery after forty-eight hours, and eight hours later, she showed cephalaea, growing dyspnea and cyanosis.

Pneumonologic and cardiac advice were required. Chest examination showed: damp sounds in the right upper lung zone. Heart examination showed: blood pressure of 95/70mmHg, medium heart rate of 86 beats/min (max heart rate: 129, min heart rate: 54).

Upon physical examination, the woman was afebrile with a body temperature of 36°C.

She was intubated and treated by intravenous inotropic therapy.

An arterial blood-gas analysis gave the following values: pH, 7.462; partial pressure of oxygen, 38.7 mmHg; carbon dioxide pressure, 26,3 mmHg; bicarbonate, 18.5 mmol/L.

Electrocardiography showed: sinus rhythm (86/min), ST-segment changes without necrosis and ischemia; supraventricular ectopic beats of 63SV; no bradycardia; no paroxysmal supraventricular tachycardia.

Echocardiography revealed: severe LV systolic dysfunction with akinesia of the LV base and mid-portion, together with hypercontractility of the apex and ejection fraction of 30%; mild mitral and tricuspid regurgitation; pulmonary hypertension with a pulmonary arterial pressure of 45 mmHg; no pericardium effusion; Inferior Vena Cava congestion.

Coronary angiography revealed that both coronary arteries were intact [1].

Because of the patient's hemodynamic instability, intra-aortic balloon pumping was begun, and medical treatment that included inotropic agents. The woman was admitted into Cardiac Intensive Care Unit [2].

Laboratory findings included raised levels of: ferritine (506ng/ml; normal 10-291ng/ml), troponin I (1,73ng/ml; normal 0-0,10) and PCR (12,3 mg/dl; normal <0,5); CK muscle and brain (MB) is 63,1 ng/ml (reference range 10-92).

The patient received cardiogenic shock due to takotsubo cardiomyopathy treatment. She responded well to treatment: her hemodynamic state stabilized one day later; intra-aortic balloon pumping was discontinued two days later and tracheal tube was removed.

About two weeks later, echocardiography showed complete recovery of LV systolic and diastolic function,

chest radiography was normal so the patient was discharged [3].

This case further supports the importance of performing a pre-conception planning, and proper counselling about the timing and mode of delivery by a coordinated decision between the gynaecologist, anaesthesiologist and cardiologist to balances mother's and fetus's risks (**Table 1, Table 2**). The purpose is the early diagnosis and the best management of the cardiomyopathy [4-6].



Figure 1. A picture of a real takotsubo, a Japanese octopus fishing pot.

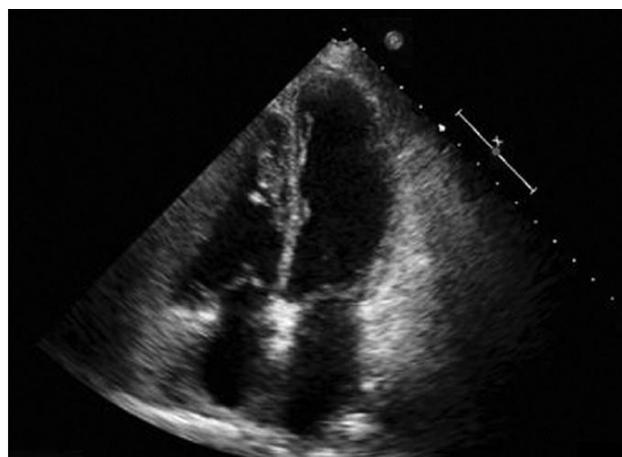


Figure 2. Echocardiography of takotsubo.

Pre-conception evaluation
- Thorough history of cardiac symptoms and physical examination
- 12-lead electrocardiogram
- Baseline exercise tolerance and functional class (exercise testing if needed)
- Baseline echocardiogram
- Assessment of ventricular function (right and left)
- Assessment of pulmonary artery pressure
- Presence and degree of valvular dysfunction
- Assessment of stability of cardiac hemodynamic status over time
- Effective contraception until pregnancy desired
- Adjust medications to prevent adverse fetal events
- Genetics referral for patients with heritable cardiac lesion

Table 1. Pregnancy after Tako Tsubo: risk assessment

Decision regarding timing and mode of delivery
- Management during labor and delivery and post-partum concerns
- Short vaginal delivery with excellent anesthesia, with consideration of assisted second stage of labor
- Left lateral decubitus position
- Cesarean section per obstetric indications
- Invasive monitoring if needed (right heart catheterization, invasive arterial blood pressure monitoring)
- Medical therapy optimization of loading conditions
- Consider treatment of severe anemia
- Medical therapy to optimize loading conditions
- Hemodynamic monitoring for 12–24 h
- Contraception or sterilization consideration
- Future consideration of ICD

Table 2. TakoTsubo prevention during labour and delivery

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