

## Anesthesia and Takayasu's arteritis

NATAN WEKSLER

Division of Anesthesiology and Intensive Care, Soroka Medical Center, Ben Gurion University of the Negev, Beer-Sheva 84101, Israel

### To the editor:

Type III Takayasu's arteritis is a form of chronic inflammatory arteriopathy in which there is involvement of the aortic arch plus the descending thoracic and abdominal aorta. Since the major clinical finding is the loss of palpable pulses in the affected vessels, monitoring arterial blood pressure by oscillometry or by the Korotkoff sounds sometimes may be impossible, making anesthesia very stressful for the anesthesiologist.

It is very important to assess the peripheral blood pressure during anesthesia because once arterial blood pressure is maintained, it can be assumed that central organ perfusion is assured. An adequate head of pressure is mandatory to overcome the critical closing pressure of the different vital organs [1]. The avoidance of hypotension is essential during anesthesia in Takayasu's arteritis because this condition induces abnormal regional blood flow, decreasing the carotid artery blood flow and jeopardizing cerebral perfusion [2]. Moreover, inaccurate or insufficient information about the blood pressure due to technical difficulties in these patients may expose them to occult but dangerous levels of hypo- or hypertension.

We recently anesthetized a 26-year-old woman with type III Takayasu's arteritis who underwent an exploratory laparotomy due to an obstructive ileus. A pulse oximeter was used to assess intraoperatively the systolic blood pressure. Korotkoff sounds were inaudible in the arteries of the upper and lower extremities. The rest of the physical examination was normal. On the preoperative physical assessment, all the peripheral as well as the femoral pulses were impalpable, and only weak carotid pulsations on both sides were felt.

Immediately before the anesthetic induction, the patient was connected to a Cardiocap (Datex Instrumentarium, Helsinki, Finland) for noninvasive blood pressure monitoring, but repeated blood pressure measurements showed several artifacts such as a long mea-

surement cycle and low inflation pressure. In addition, blood pressure varied widely from 40/20 mmHg to 180/140 mmHg in consecutive cycles, making the oscillometric technique unreliable for intraoperative blood pressure monitoring. Since the plethysmographic waveform of the pulse oximeter was well displayed, it was used to monitor the patient's systolic blood pressure.

An appropriate-sized blood pressure cuff attached to a sphygmomanometer was placed on the patient arm on the same side as the pulse oximeter probe. The cuff was gradually inflated in 5-mmHg increments until the plethysmographic waveform of the pulse oximeter had disappeared and then rapidly inflated to 50 mmHg higher. A gradual deflation was started in 5-mmHg decrements until the waveform reappeared. The average of both values was recorded as the systolic blood pressure [3]. Several measurements showed values varying from 180 to 200 mmHg. After rapid sequence induction and the Sellick maneuver for intubation, an adhesiotomy was performed under halothane/N<sub>2</sub>O/O<sub>2</sub>/pancuronium anesthesia. The patient eventually made a complete recovery and was discharged on the 5th postoperative day.

Although blood pressure monitoring can be difficult during anesthesia in patients with Takayasu's arteritis, the plethysmographic waveform of the pulse oximeter can be a useful method for systolic blood pressure monitoring [4,5]. Because it correlates well with conventional methods of blood pressure measurement [6], there is normally no need for direct cannulation of arteries or other costly noninvasive methods of blood pressure determination.

### References

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