IS INVASIVE PRESSURE MONITORING MORE RELIABLE THAN NON-INVASIVE IN PATIENTS WITH CARDIOVASCULAR PATHOLOGY?

A CASE REPORT

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BACKGROUND

Patients undergoing carotid endarterectomy (CEA) require strict arterial blood pressure (BP) control to maintain adequate cerebral perfusion. Invasive blood pressure (IBP) is the gold standard, however artifacts may lead to erroneous readings.¹

We report a case of CEA using IBP monitoring.

CASE REPORT

IDENTIFICATION

Male, 64 years old, ASA III

- ✓ Diffuse atheromathosis, dyslipidemia and non-medicated hypertension
- ✓ Diagnosis: carotid stenosis
- ✓ Surgery: elective right carotid endarterectomy
- ✓ **Anesthesia technique:** General Anesthesia (GA)

MONITORIZATION

- ASA standard, neuromuscular block monitoring, anesthesia depth and cerebral oximetry
- **PREANAESTHETIC ASSESSMENT NONINVASIVE BP (NIBP)**
 - **no significant difference** between right and left arms (180/90 mmHg)
- **IBP monitoring** was placed in **left radial artery** after several attempts
- **INTRAOPERATIVE**

IBP stable
140/86 mmHg

Systolic
carotid artery
pressure: 210-
220mmHg

NIBP in both
legs 210-
220mmHg

NIBP was used to **monitor and guide the BP target** until the **end of the procedure**. Surgery proceeded uneventfully.

POSTOPERATIVE

NIBP was used to **monitor and guide the BP target** at **PACU**, despite the presence of IBP monitoring

POSTOPERATIVE DAY 2:

At PACU: NIBP shows **Hypertensive Crisis**

Cervical Neck Haematoma

Emergent Surgery under GA.

Intraoperatively the **BP was assessed with NIBP**

POSTOPERATIVE DAY 8:

Patient was discharged without further complications.

DISCUSSION

IBP allow beat-by-beat measures with optimization of BP in order to improve cerebral perfusion during CEA. NIBP may be an alternative, however is not continuous and is expected to be less accurate than the IBP.¹ The high IBP-NIBP difference (>40 mmHg) was clinically relevant and in this patient might be explained by diffuse atheromatosis. NIBP was compatible with carotid systolic pressure, indicating that, in this case was a reliable and accurate method of monitoring.

LEARNING POINTS

IBP can be inaccurate in patients with diffuse atheromatosis. This pathology may have clinical relevance and may demand non-invasive arterial pressure measurement may help during and after surgery avoiding inappropriate treatments.

REFERENCES

- 1- Romagnoli S et al. Accuracy of invasive arterial pressure monitoring in cardiovascular patients: an observational study. Critical Care. 2014; 18:644.