Apoplexy in pituitary macroadenoma after coronary artery bypass

Herranz, G; Guadalupe, N; Martínez, S; Baute, J; Moral, V.

Hospital de la Santa Creu i Sant Pau. Dept of Anaesthesiology, Intensive Care & Pain Unit. Barcelona, Spain

BACKGROUND

New onset of pituitary tumor (PT) apoplexy following cardiopulmonary bypass (CPB) surgery is a very rare complication with variable clinical presentations. The increase in sellar contents produces a severe headache, visual disturbances and impairment in pituitary function.

CASE REPORT

We report a case of a 61 years man with a medical history of tabaquism, hypertension, hypercholesterolemia and triple vessel coronary artery disease presented as instable angina, who developed third nerve palsy and severe headache after off-pump triple coronary artery bypass grafting surgery. Standard monitoring plus transesophageal echocardiography and BIS was used. Low-dose noradrenaline perfusion was started after induction because of refractory hypotension.

Surgery concluded without complications and the patient was admitted in the ICU where noradrenaline could progressively be stopped.

After four hours the patient was extubated and found a left third cranial nerve palsy with ptosis and dilated pupil. Severe headache, diplopia and visual disturbances were also noticed, with no other neurologic symptoms.

Urgent CT revealed the presence of a sellar mass with supra-infra ethmoidal and parasellar extension (**Figure 1**).

Neurosurgical consultation was obtained. A stress dose of hydrocortisone was given and after that glucocorticoid and thyroid hormone replacement therapy maintained. All electrolytes, cortisol, prolactin and thyroid levels were within normal range.

Twelve hours later, the patient presented an episode of bradycardia and mental status deterioration so he was reintubated and another CT and MRI showed a tumor growth without signs of bleeding (**Figure 2**).

Endoscopic endonasal transsphenoidal surgery was scheduled next week and successfully done with almost full recovery of visual and third cranial nerve function. Imaging studies suggested no residual pituitary tumor.

Figure 1: CT

Figure 2: MRI

DISCUSSION

New onset of pituitary tumor apoplexy following cardiopulmonary bypass surgery is an extremely rare complication and not widely recognized, with variable clinical presentations. The sudden increase in sellar contents compresses surrounding structures and portal vessels, resulting in sudden, severe headache, visual disturbances, and impairment in pituitary function.

Precipitating factors may be related to the extracorporeal bypass apparatus, anticoagulation, low cerebral blood flow, and anesthetic agents. In this case, surgery was performed without CPB, so hypotension and low cerebral hypoperfusion or anticoagulation could be the root cause of pituitary apoplexy.

There are very few cases reported, none of them with such a very early onset and only associated with unilateral single third cranial nerve palsy without other neurological or endocrine deficits.

Success in the management depends on early diagnosis and effective intervention. Neuroimaging studies and pituitary function must be performed. Surgery for prompt decompression is the most common choice of treatment, but each case should be scrutinized to evaluate risks and benefits for tolerating anesthesia and surgical stress after CBP surgery.

REFERENCES

- 1.- Hidiroglu M, et al. Ann of Thorac Surg 2010, 89: 1635-37.
- 2.- Telesca M, et. Intensive Care Med 2009, 35:185-186.

- 3.- Fuentes F, et al. Rev Cubana de Cardiología y Cirugía Cardiovascular 2017, 23,3.