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CEREBRAL VENOUS THROMBOSIS IN MILITARY PILOT: CASE REPORT

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INTRODUCTION

Cerebral venous thrombosis (CVT) represents an underdiagnosed and less common cause of stoke (0,5-1% of all strokes in adults), but it is much more frequent than previously assumed. CVT has a higher frequency among cases with thrombophilia, due to oral contraceptives, malignancy or infections. This report describes an extremely rare case of thrombosis of multiple intracranial dural sinuses in a military pilot during the flight.

CASE PRESENTATION

A 38-year-old male pilot report headache and nausea four hours after taking off a military flight (10 hours) . He presented a medical history of intestinal thrombosis after the second dose of the covid-19 vaccine two years before the current episode. During the flight he was treated by the flight surgeon and his symptoms improved and landed safely at his destination.Two days after landing, the headache returned and it was necessary to look for a military hospital.

The neurological examination on admission was considered normal. The results of the laboratory tests were considered normal, except for a ,D-dimer of 8450 ng/ml. Unenhanced head CT scan realized in the ER of military hospital revealed hyperdensities along the left tentorium. We did not any parenchymal lesions. He was underwent magnetic resonance imaging (MRI) combined with MR venography. The absence of parenchymal lesions was noted by MRI. The diagnosis of acute thrombosis was obtained (superior sagittal sinus, dural sinus and right transverse sinus). He immediately received low molecular-weight heparin(LMWH) and was admitted to an intensive care unit (ICU). After four days of treatment with LMWH, the symptoms were gradually relieved. After acute phase, he received apixaban 5mg twice a day for an indefinite duration and was referred to the hematology department for investigation of thrombophilia.

CONCLUSION

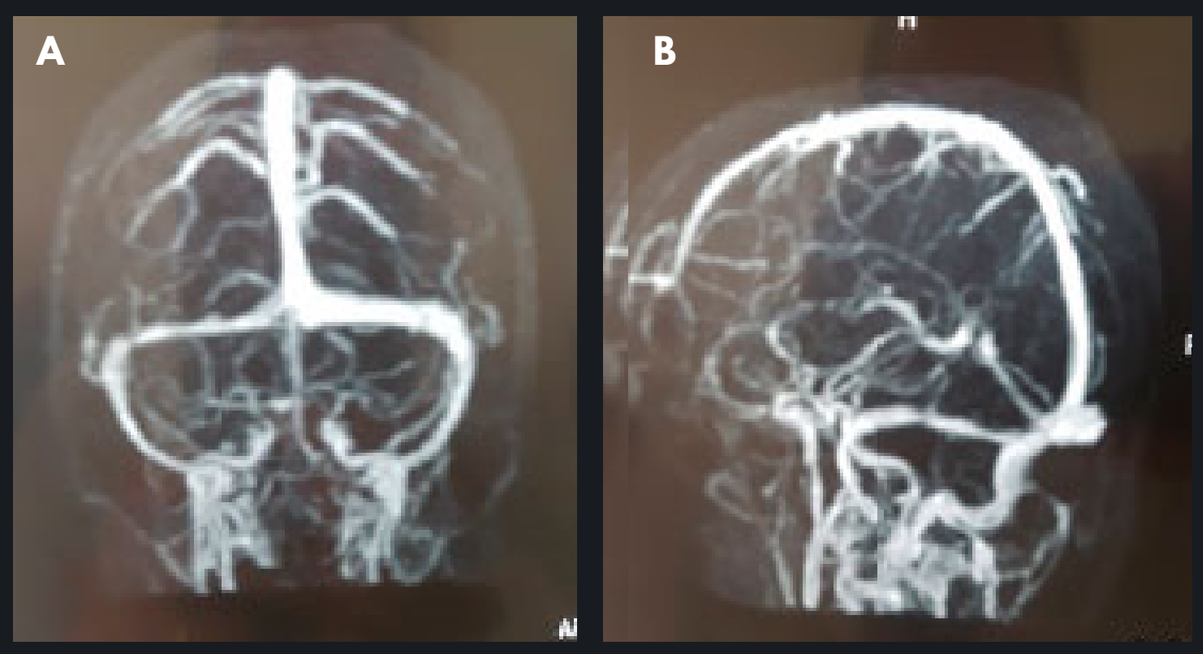
CVT is a relatively rare condition, especially during military flights. It is a medical condition that has a good prognosis when properly diagnosed and treated. Pilots and flight surgeons must be aware of the symptoms and, above all, respect flight fatigue intervals, as multiple flight legs can also increase the risk of thrombotic events.

REFERENCES

DISCUSSION

Literature on the occurrence of CVT in military pilots is scarce. The exact in incidence of CVT occurring at a high altitude flight , where hypobaric hypoxia is a major risk factor, is still uncertain. A review of the literature showed that men are more likely to develop CVT at high altitudes and the reason for this still needs further study. The risk of a thrombotic events is increase by 30 times at high altitude. Other mechanisms may suggest the development of CVT such as hereditary thrombophilia, dehydration, prolonged immobility, polycythemia, among others. MacCallum et al showed in his study that cumulative flying time of > 12 h is associated with similar risk of Venous Thromboembolism (VTE) within the subsequent 4 weeks as long-haul air travel in which on or more leg is longer than 4h. Pichler et al showed that high altitude increases the risk of hypercoagulability. Long-duration flights at high altitudes are part of a military pilot's routine. Performing military aerial activity requires many flight legs and few hours of rest, which may be associated with an increased incidence of thrombotic events. CVT has a good prognosis in numerous case, however male sex, intracerebral hemorrhage, coma, seizures were associated a poor prognosis. The high level of clinical suspicion associated with the identification of risk factors may contribute to the suspicion of the diagnosis of CVT, especially in an environment of covid 19.

FIGURES



A) Anteroposterior venography shows partial obstruction in the transverse venous sinus.
B) lateral venography shows total obstruction in the sagittal venous sinus.

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