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Case report

Posterior fossa surgery in octogenarians: Special considerations

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1. Introduction

In the present case, we describe a rare presentation of cerebellar hemangioblastoma, the management, considerations, and outcome, in an 89 year-old male. Hemangioblastomas are benign vascular tumors that occur most commonly in the cerebellum. They represent 1–2% of all intracranial tumors and typically affect males in their third to fifth decade of life. Most hemangioblastomas are cystic with a mural nodule and occur sporadically. Approximately 25% of hemangioblastomas occur in association with von Hippel–Lindau (VHL) disease. Neurosurgical intervention in the elderly is commonly associated with higher peri-operative and post-operative morbidity that can often deter multi-disciplinary teams from pursuing operative management. Thus far, there have been three reported cases of hemangioblastomas occurring in this age group (ages 81, 86, and 95) – this case represents the fourth [1,2].

2. Case report

Presentation: An 89 year-old high-functioning gentleman with a history of limited local melanoma of the ear and distant history of prostate cancer presented with several weeks of progressive gait instability. Neurologic exam was non-focal except for mild ataxia and left-sided dysmetria. Gadolinium-enhanced magnetic resonance imaging (MRI) demonstrated a solid, heterogeneously enhancing mass in the left cerebellar hemisphere with peri-lesional edema and effacement of the fourth ventricle (Fig. 1a). At the time, metastatic disease was believed to be the most likely diagnosis. Computed tomography (CT) scan of the chest, abdomen, and pelvis, however, did not reveal any primary oncologic disease. The patient underwent surgical resection.

Surgical Management: In the supine position, abdominal fat was obtained for autologous fat grafting during closure. The patient was then placed in a lateral park-bench position (Fig. 2) with the lower arm free to hang off the top of the bed. A stack of blankets is placed anterior to the chest and abdomen, while the patient is secured to the table using heavy tape. The upper arm rests freely on the stack of blankets. The entire table is then placed in reverse Trendelenberg with the head fixed using Mayfield pins. The head is positioned with slight flexion, contralateral rotation, and contralateral bend. The upper shoulder is then taped to the foot of the bed. Intraoperative guidance is used to define the boundaries of the transverse and sigmoid sinus. A burr hole is placed safely away from the sinus junction and a small craniotomy is performed (Fig. 3a). A side-cutting drill is used to thin the bone overlying the edge of the venous sinuses. A diamond drill is then used to skeletonize the edge of the venous

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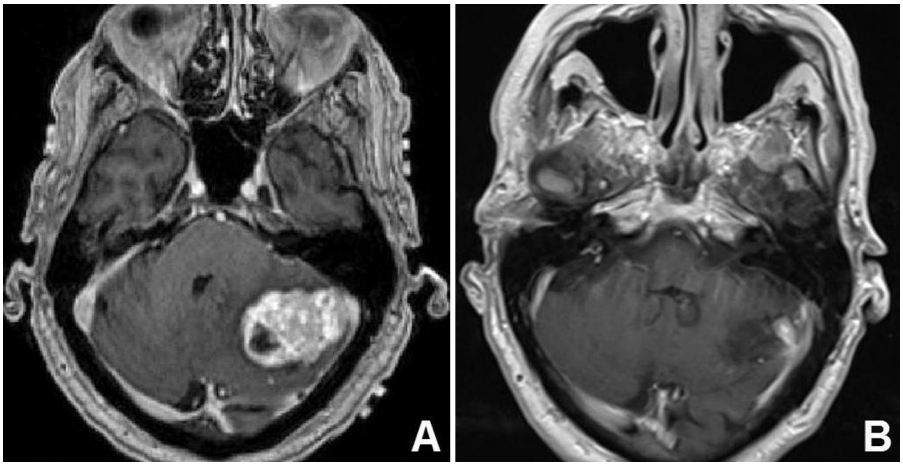

Fig. 1. (a) Pre- and (b) post-operative axial images of a gadolinium-enhanced MRI scan of the head demonstrating enhancing mass in the left cerebellar hemisphere.

sinuses, which allows for direct visualization of this vital structure and safely maximizing surgical exposure. Upon visualization of the dura, no evidence of tumor infiltration was noted. A curvilinear dural incision was performed following the border of the transverse and sigmoid sinuses (Fig. 3b). Following microsurgical resection of the vascular tumor, the dura was closed primarily with Duragen® (Integra LifeSciences Corporation) and fat graft reinforcement. Sufficient fat graft was used to ensure elimination of all dead space and produce gentle pressure on the dura after titanium mesh was placed to reconstruct the craniectomy defect. Multi-layered fascial closure was followed by skin closure with a running, locked suture.

Post-operative course: Pathological results were consistent with hemangioblastoma (Fig. 4). The patient was admitted to intensive care for one night and transferred to a regular room on post-operation day 1. He was initiated on heparin thromboprophylaxis and aggressive physical therapy. The patient recovered well and was discharged home on post-operation day 2. At 2-month follow-up, he had no neurologic deficits and resumed full normal activity.

3. Discussion

While metastatic disease remains the most likely etiology for a cerebellar mass presenting in the elderly, this case highlights

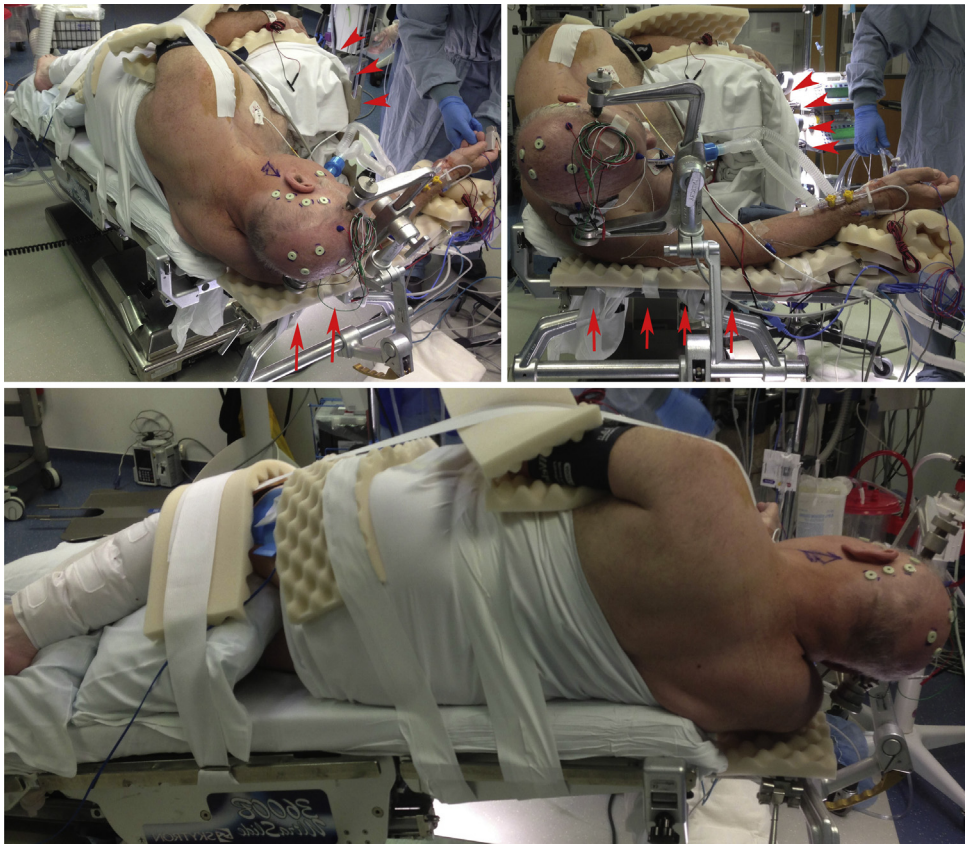

Fig. 2. Lateral, park bench, position with reverse Trendelenberg and both arms free and accessible. An arm board with foam padding (arrows) is placed on the Mayfield adaptor to support the lower arm. A stack of blankets (arrowheads) is placed anterior to the torso to stabilize the body and allow the upper arm to rest freely.