International Journal of Current Advanced Research
ISSN: O: 2319-6475, ISSN: P: 2319-6505, Impact Factor: 6.614
Available Online at www.journalijcar.org
Volume 9; Issue 02 (B); February 2020; Page No.21190-21192
DOI: http://dx.doi.org/10.24327/ijcar.2020.21192.4157

Research Article

DEATH DUE TO HEMANGIOPERICYTOMA LIKE MENINGIOMA - A CASE REPORT

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A R T I C L E I N F O

Article History:
Received 10th November, 2019
Received in revised form 2nd December, 2019
Accepted 26th January, 2019
Published online 28th February, 2020

Key words:

Hemangiopericytoma, Meningeal tumor, Meningioma, Space occupying lesion, Abetment of Suicide, Histopathological examination.

A B S T R A C T

A hemangiopericytoma is a type of soft tissue sarcoma that originates in the pericytes in the walls of capillaries. When inside the nervous system, although not strictly a meningioma tumour, it is a meningeal tumor with a special aggressive behaviour. Meningeal hemangiopericytoma are rare tumors and account for less than 1% of all intracranial tumors. They can be benign or malignant. These tumors are more common in females and in fourth or fifth decade of life.

Hereby, we present a case of 41 year old female who had alleged fight with her husband and mother in law because of extramarital affair of her husband previous day. At that night 3:30 AM she was not feeling well. After some time husband took her to nearby hospital but she was declared brought dead. Her parents complained to police that she had consumed some unknown poison and case was booked under Section 306 of IPC (Abetment of Suicide). During post mortem we found a brain tumor (space occupying lesion) present over left temporal region of brain extending to the left side of base of skull over middle cranial fossa in sphenoid wing. Blood and Viscera were sent to Forensic science laboratory to rule out any poisoning, the report of which came as negative. Histopathological examination confirmed the diagnosis of this tumour as hemangiopericytoma like meningioma.

INTRODUCTION

A hemangiopericytoma is a type of soft tissue sarcoma that originates in the pericytes in the walls of capillaries. When inside the nervous system, although not strictly a meningioma tumour, it is a meningeal tumor with a special aggressive behaviour. Meningeal hemangiopericytoma are rare tumors and account for less than 1% of all intracranial tumors. They can be benign or malignant. These tumors are more common in females and in fourth or fifth decade of life.[1]Central nervous system (CNS) hemangiopericytoma (HPC) is a rare mesenchymal tumor which was first described by Stout and Murray in 1942.[2]On the other hand meningiomas are diverse set of tumours arising from meninges.[3] About 90% of meningiomas are benign and only 2-3% are malignant or anaplastic.[4] Of all cranial meningiomas, about 20% are in the sphenoid wing.[5] Because of significant overlap in morphologic and immunohistochemical features it is very difficult to distinguish between anaplastic meningioma and meningeal hemangiopericytoma.[6]

Case report

A 41 year old female had alleged fight with her husband and mother in law because of extramarital affair of her husband previous day. At that night 3:30 AM she was not feeling well. After some time husband took her to nearby hospital but she was declared brought dead. Her parents complained to police and case was booked under Section 306 of IPC (Abetment of Suicide). Police and relatives gave the history that she had consumed some unknown poison. Autopsy was conducted at Victoria hospital mortuary in Bangalore. On post mortem examination, deceased was moderately built and moderately nourished. Hypopigmented patches were present over the body at places. There were no external or internal injuries. Brain was congested and edematous. A mass (space occupying lesion) measuring 7 cm x 5 cm x 4 cm was present over left temporal region of brain extending to the left side of base of skull over middle cranial fossa in sphenoid wing. The left wing of sphenoid of middle cranial fossa was deeper as compared to right sphenoid wing due to pressure effect of the mass (space occupying lesion). This mass was also compressing the brain. Weight of brain along with mass was 1300 gms. Lungs were congested and edematous. Stomach contained about 100 ml of brown colored fluid. No unusual smell was appreciated and stomach mucosa was congested. Other internal organs were congested. Blood and Viscera were sent to Forensic science laboratory to rule out any poisoning, the report of which came as negative. Histopathological examination of brain showed congestion and edema , and diagnosed the mass over brain as hemangipericytoma like meningioma.

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The cause of death in this case was due to hemangipericytoma like meningioma and its sequelae.

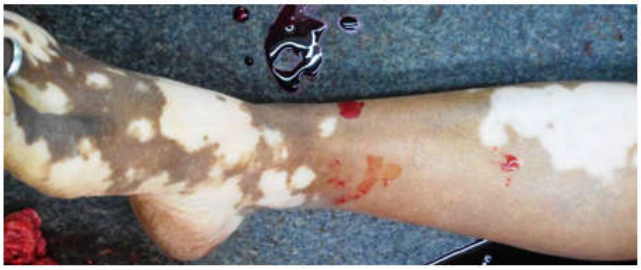

Fig 1 The photograph showing hypopigmented patches present at places over right leg and foot.

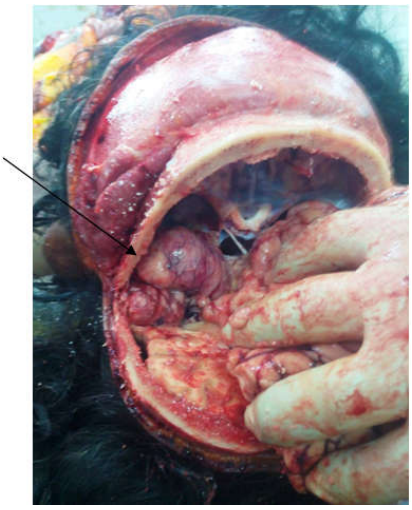

Fig 2 The photograph showing a mass (space occupying lesion) present over left temporal region of brain extending to the left side of base of skull over middle cranial fossa in sphenoid wing.

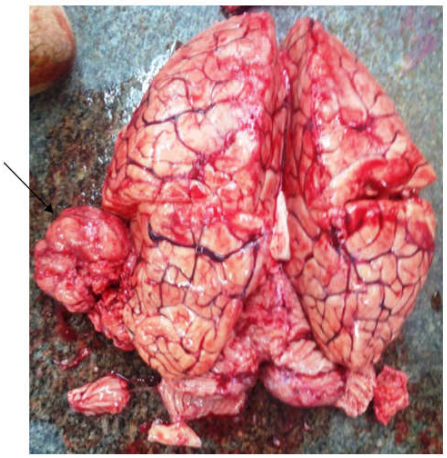

Fig 3 The photograph showing edematous brain with a mass (space occupying lesion) present over left temporal region of brain and compressing the brain.

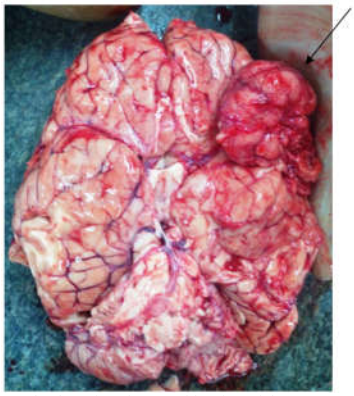

Fig 4 The photograph showing base of brain with a mass (space occupying lesion).

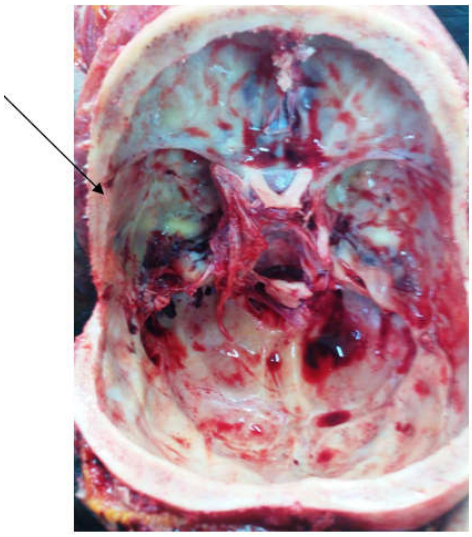

Fig 5 The photograph showing deeper left wing of sphenoid of middle cranial fossa as compared to right sphenoid wing due to pressure effect of the mass (space occupying lesion).

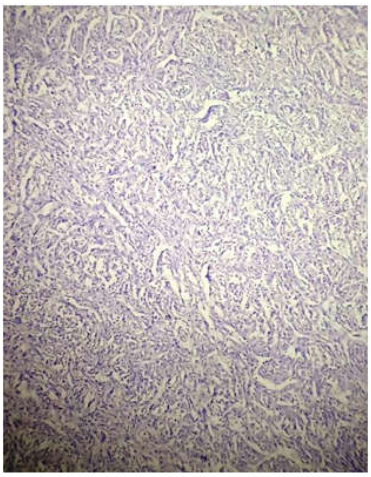

Fig 6 Photomicrograph of the mass (space occupying lesion) of brain showing staghorn pattern of vascular spaces (H & E, low power view).

DISCUSSION

Hypopigmented patches over the skin and occurrence of brain tumor (hemangipericytoma like meningioma) in middle aged female indicate towards neurofibromatosis type I, which is caused by mutation of a gene on the long arm of chromosome 17 which encodes a protein known as neurofibromin. It is an autosomal dominant disorder.[7]

On further asking, relatives gave history of recurrent headaches since long time, for which she used to take pain killers. There was no family history of any brain tumor and no history of chronic radiation exposure.

Brain tumor could not be diagnosed due to lack of investigations. Later this undiagnosed and untreated brain tumor (hemangipericytoma like meningioma) became cause for sudden death in this female due to pressure effect over the brain stem.

Dufour H *et al*, conducted a retrospective study in which 21 patients with meningeal hemangiopericytoma were followed during a 34-year period. In 17 patients, the meningeal hemangiopericytoma was intracranial, and in 4 there was an intradural extramedullary localization.[8]

Goellner JR *et al*, in a study of 26 hemangiopericytomas of the meninges revealed that the histologic appearance (including

ultrastructural features) was similar to that of hemangiopericytomas of soft tissues. Both sexes were affected, and occurrence was most frequent in the adult years, with no symptoms specific for the lesions. The lesions were characterized by an aggressive course, with recurrence in 80% of the patients, and metastases in 23%; thus, the importance of recognizing the lesion pathologically is emphasized.[9]

Guthrie BL *et al*, reviewed 44 cases of meningeal hemangiopericytoma that were treated between 1938 and 1987. The average age of the patients at diagnosis was 42 years. The average duration of preoperative symptoms was 11 months. Symptoms were related to tumor location, which was similar to that of meningioma. Tentorial and posterior fossa tumors tended to be more lethal.[10]

Noh SH *et al*, studied 15 patients of meningeal hemangiopericytoma (MHPC) retrospectively who underwent surgical treatments performed by one senior neurosurgeon between 1997 and 2013. Out of fifteen patients, 12 (80%) had tumors in the supratentorial region, and 3 (20%) had tumors in the infratentorial region.[11]

Ghose A *et al*, conducted a study in which a total of 523 patients of newly diagnosed CNS hemangiopericytoma were analyzed for age, sex, mode of recurrence and metastases, and survival after complete/incomplete resection with or without radiation. The mean age was found to be 44.17 (±3.59) years. The incidence was higher in male individuals younger than 45 years and in older female individuals. Complete resection and adjuvant radiation significantly improved survival in comparison with incomplete resection and no radiation, respectively. Furthermore, a significant trend of the tumor to recur locally compared with extraneural and neural axis metastases was noted. The mean time for distant metastases was seen to be 91.33 (±12.66) months.[12]

Tanaka T *et al*, in 2014, reported a rare case of unpredicted sudden death arising from recurrent hemangiopericytoma with massive intracranial hemorrhage.[13]

CONCLUSION

We described a case of a middle aged female who had alleged fight with her husband and mother in law because of extramarital affair of her husband previous day. At that night she was not feeling well and taken to nearby hospital but she was declared brought dead. Her parents complained to police that she had consumed some unknown poison and case was booked under Section 306 of IPC (Abetment of Suicide). During post mortem we found a brain tumor (space occupying lesion) present over left temporal region of brain extending to the left side of base of skull over middle cranial fossa in sphenoid wing. This mass was diagnosed as hemangipericytoma like meningioma during histopathological examination and the chemical analysis report of viscera came as negative for poisons. This case highlights that thorough knowledge of pathological lesions causing sudden natural death is very much essential for autopsy surgeon. This should be accompanied by meticulous autopsy, observation of histopathological findings and chemical analysis of viscera.

Acknowledgements: I would like to thank and acknowledge Dr. P. K. Devadass, Retd. Professor of Forensic Medicine, Ex. Dean & Director, and Dr. Dayanand S. Biligi, Professor & Head, Dept. of Pathology, Bangalore Medical College & Research Institute, Bangalore for their guidance, constant support and encouragement.

Conflict of Interest: None.
Financial Assistance: None.

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