

**Case Report**

**Open Access**

**Spontaneous Intratumoral Haemorrhage : A case report of a Meningioma**

<sup>1\*</sup>Antonythomas, <sup>2</sup>Tharun krishna, <sup>3</sup>Matthew Kolling, <sup>4</sup>Lizet Louw.

Department of neurosurgery, klerksdrop/tshepong hospital complex (University of witwatersand) klerksdrop, North west province, South africa.

<sup>1\*</sup>Specialist Consultant, <sup>2</sup>Neurosurgeon, <sup>3</sup>Assistant Medical Officer, <sup>4</sup>Medical Officer.

**\*Corresponding Author:** Antony Thomas et al, Department of neurosurgery, klerksdrop/tshepong hospital complex (University of witwatersand) klerksdrop, North west province, South africa. Email: antonythomas@doctor.com

**Citation:** Antony Thomas et al. (2017) Spontaneous Intratumoral Haemorrhage : A case report of a Meningioma. Int J Sur &Trans Res. 1-1, 1.

**Copyright:** © Antony Thomas et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

**Received** December 29, 2016; **Accepted** January 15, 2017; **Published** January 31, 2017.

**Spontaneous Intratumoral Haemorrhage: A case report of a Meningioma**

Dr. Antony Thomas MBChB (Neurology) / PhD (Neuroscience) | Dr. Tharun Krishna MBChB MS, SFCS | Dr. Matthew Kolling MBChB | Dr. Lizet Louw MBChB (Neuroscience)

Department of Neurosurgery, Klerksdrop/Tshepong Hospital Complex (University of Witwatersand) Klerksdrop, North West Province, South Africa

**Abstract**  
A very rare complication of meningiomas is haemorrhage, this can occur spontaneously, after neuroleptics, anaesthetics induction and postoperatively. We are presenting a case of a 43 year old female, transferred from a referral hospital with a low Glasgow Coma Scale. Meningiomas with haemorrhagic onset remain rare and its pathophysiology is still incompletely understood. The prevention and outcome of intratumoral haemorrhage highly depends on early diagnosis and adequate treatment.

**Introduction**  
Intracranial tumours presenting with haemorrhage constitute 1.8 to 5.4% of all tumours, more in malignant pathology such as metastatic tumours or gliomas. [1] Haemorrhage is an unusual presentation of benign tumours except in cases of pituitary adenoma. [2] Meningiomas are benign, slow-growing, highly vascularized tumours, it is extremely rare that their onset is spontaneous, mimicking cerebrovascular incidents and thus affecting the diagnostic workup, treatment and outcome. [3]

**Case Report**  
A 43 year female was referred with history of sudden onset of severe headache, decreased level of consciousness and GCS was 9/15. The Computed tomography (CT) scan axial section (Figure 1) showed a hypodense lesion in the right frontal parietal region, causing midline shift and mass effect. CT angiogram (Figure 2) revealed calcification, heterogeneous mass with meningeal blood supply. She was given steroids, antiepileptic, analgesia and then taken for meningioma surgery on a Sunday where a right frontal craniotomy with complete tumour removal was performed. Intraoperatively, the tumor was dark red, soft, vascular with areas of hemorrhage. The histopathology showed that the tumour was Atypical Transitional meningioma WHO Grade 2. Postoperatively the patient remained lucid, became continent and was following simple commands. (Figure 3-4) she was discharged to Potchefstroom hospital with GCS 15 and no gross neurological deficits on postoperative Day 10. CT Brain scans done every six months (Figure 5) and last Magnetic Resonance Imaging (MRI) done after one year and six months revealed no recurrence or residual tumor. She is on antiepileptics, returned back to her work. She is on continued follow-up with annual MRI scan.

**Figure 1:** Right Large subdural-mass compressing midline (axial).  
**Figure 2:** Postoperative day 9 Patient GCS15 with no gross neurological deficits.  
**Figure 3:** CT Brain Potchefstroom axial images showed hyperdense heterogeneous large lesion in the right frontal parietal region causing midline shift and mass effect.  
**Figure 4:** CT angiogram Coronal at Potchefstroom revealed calcification, heterogeneous mass with meningeal blood supply.

**Figure 5:** Postoperative CT brain with contrast axial images showing no residual or recurrent tumor at 6 months and 18 months of follow-up.

**Discussion**  
The incidence of haemorrhage associated with meningiomas are extra-intratumoral and subarachnoid in most cases, whereas subdural, intracranial and ITH are less frequent. [3] The location of meningiomas are unrelated to the risk of bleeding in some reviews. Bionjes et al., has described that the mortality rate associated with bleeding from meningiomas has reduced since the advent of CT scanning from 2.1% to 13.9%. [3] This is attributed to the earlier diagnosis, better surgical techniques, and advanced patient monitoring. The proportion of angiomatous (16%) and malignant (5.7%) haemorrhagic variants of meningiomas were found to be higher in the same study. [3] Phadke et al., however did not document any cases of bleeding in the 81 patients with angiomatous meningiomas. [5] Yasargil reported a 1-2 % incidence of brain tumour in patients presenting with subarachnoid haemorrhage. [4]

The mechanisms of spontaneous ITH in meningiomas are not yet understood and several hypotheses have been proposed. The most common is the rupture of the abnormal vasculature of tumor. This is based on findings such as well-defined masses on microscopy or peritumour vascular ectasia by the tumor directly. [3] Goukewicz et al mentioned that necrosis of the tumor can cause direct breakdown of the tumor vessels and subsequent haemorrhage. [6] Jones reported nodal granululation tissue around a central area of necrosis and hypothesized that bleeding is derived from neovasculature. [7] Another hypothesis suggests that enlarged, tortuous feeding arteries are less resistant to blood pressure changes and susceptible to rupture. Rupture of the bridging veins secondary to their stretch is also a probable cause of haemorrhage. Kim et al identified retraction of the meningioma in cases with haemorrhage. [8] Blood dyscrasias, anticoagulation therapy, seizures, trauma, malignant transformation have also been considered as possible causes of haemorrhage. [2] In cases with peritumoural bleeding, head injury is likely to be the cause. Concurrent vascular malformation or aneurysm may influence the hemodynamics of the meningiomas and should be assessed with appropriate study.

**Conclusion**  
One-stage total removal of the hemorrhagic meningioma and hematoma is the treatment of choice in such patients. This case describes how early haematomas evacuation and tumor resection can lead to rapid neurological improvement in the patient. However, other etiologies for haemorrhage should be excluded prior to surgical exploration.

**References**  
1. Goukewicz C, Hwang H, Poon W, et al. (2012) Spontaneous intratumoral haemorrhage in meningiomas: A retrospective study. *World Neurology* 3: 101-106.  
2. Bionjes L, van den Broek P, van den Broek P, et al. (2012) Spontaneous intratumoral haemorrhage in meningiomas: A retrospective study. *World Neurology* 3: 101-106.  
3. Bionjes L, van den Broek P, van den Broek P, et al. (2012) Spontaneous intratumoral haemorrhage in meningiomas: A retrospective study. *World Neurology* 3: 101-106.  
4. Yasargil MG (1987) Microsurgical Atlas, 2nd edn. Thieme Medical Publishers, New York.  
5. Phadke V, et al. (2012) Spontaneous intratumoral haemorrhage in meningiomas: A retrospective study. *World Neurology* 3: 101-106.  
6. Jones R (1987) Spontaneous intratumoral haemorrhage in meningiomas: A retrospective study. *World Neurology* 3: 101-106.  
7. Jones R (1987) Spontaneous intratumoral haemorrhage in meningiomas: A retrospective study. *World Neurology* 3: 101-106.  
8. Kim J, et al. (2012) Spontaneous intratumoral haemorrhage in meningiomas: A retrospective study. *World Neurology* 3: 101-106.