

A CASE REPORT: CARCINOMA AFTER TRAUMATIC BRAIN INJURY CAUSED BY INCENDIARY WEAPONS

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Abstract

Carcinoma in patients with traumatic brain injury having retained metal foreign bodies does not commonly exist. Complications of local cancer by traumatic brain injury, having retained metal foreign bodies can occasionally occur. Changes mainly appear at the wound due to chronic inflammation and cell hyperplasia, which leads to cancer. The clinical case the authors introduce is a patient participating in the Resistance War for National Salvation who was shot by artillery pieces in the right temporal. The patient was admitted to the hospital and had experienced surgery to remove a tumor from the right temporal. The histopathology of the tumor was carcinoma. After surgery, the patient was awake, the incision recovered well, and the patient could live normally.

Keywords: Carcinoma; Traumatic brain injury; Surgery.

INTRODUCTION

Cancer in chronic wounds was first described by Jean-Nicolas Marjolin in 1828. Especially wounds with retained foreign bodies in the head and neck area can result in carcinoma, making up to 80%[1]. Early surgery to remove foreign bodies is needed to prevent carcinoma at the place. The authors present a rare case with the aim to: *Evaluate the status of in situ cancer in a patient with a*

metal foreign body from a resistance war wound many years ago.

CASE REPORT

Patient Pham Van P, male, 72 years old, was presented to the hospital due to pain and swelling in his right temple and a mild fever of 37.4°C. The patient participated in the resistance war in 1972 and was hit by shell fragments in the right temple area.

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Since then, the patient has been living with a foreign metal fragment under the scalp in the right temple area. The wound is swelling, recurring many times, and gradually getting bigger. The patient had sleep disorders, dizziness, and weight loss (lost 5kg/2 months). He was admitted to the hospital with a Glasgow score of 15 points, felt pain in the right temporal region, had no paralysis, no epilepsy, and no meningeal syndrome. In the right temple area, there is a shiny mass under the scalp, about 8 x 10cm in size. A computed tomography scan of the brain shows the parenchymal window with oval heterogeneous hyperdense mass

including the subcutaneous area, skull, and the subscapular area adjacent to dura mater, bone window with the image of skull bone destruction in the tumor area, metal foreign body image under the skin in the tumor area. The patient underwent surgery to remove the tumor, skull bone, and invaded dura mater. Dural reconstruction with artificial dura mater and cranioplasty with titanium brain mesh. After surgery, the patient had no complications, and the incision recovered well. The patient was recharged from the hospital and lives normally. Histopathology results: Basal cell carcinoma.

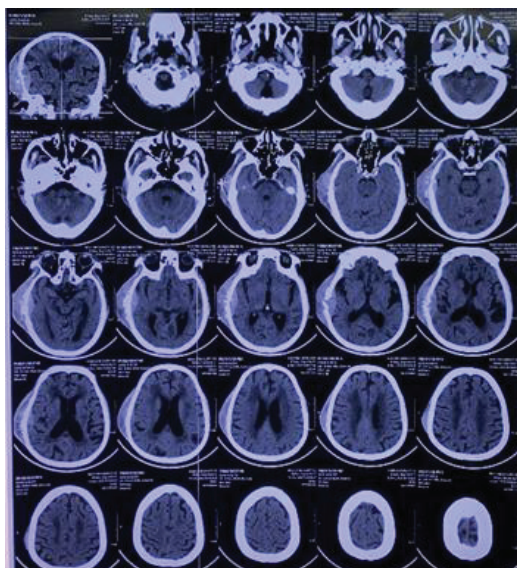


Figure 1. Preoperative computed tomography image of the brain - metal foreign body under the skin of the right temple.

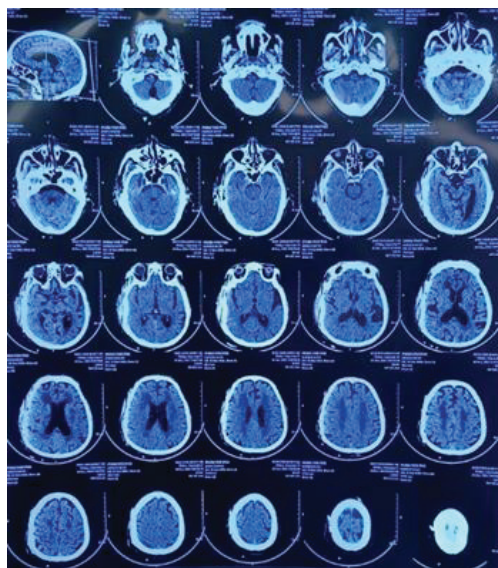


Figure 2. Post-operative computed tomography image of the brain - the tumor in the right temporal region was completely removed.

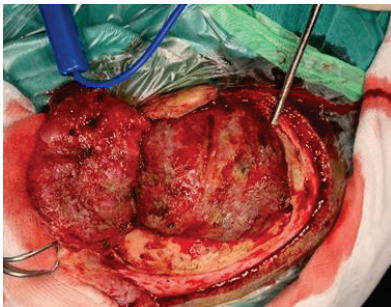


Figure 3. Exposing tumor.

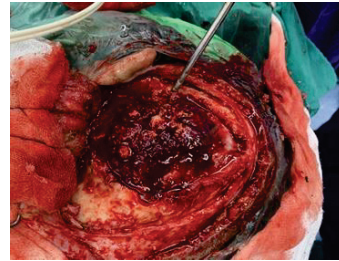


Figure 4. Tumor invades the cerebral dura mater.



Figure 5. Tumor removal.

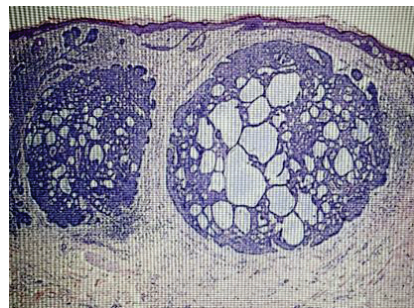


Figure 6. Histopathology.

DISCUSSION

Wounds resulting from retained foreign objects are common in Vietnam. Foreign bodies left on the body after war can be anywhere-under the skin or in the brain parenchyma or lung parenchyma. Metal foreign bodies in the head area can be in the brain parenchyma, skull, or under the scalp. We can meet patients who still have metal foreign bodies in their bodies and live peacefully with these. However, authors around the world have mentioned that cancer is due to lingering foreign objects in the wound. Verifying the relationship between cancer and lasting

foreign body injuries is still difficult. Whether the retained metal foreign body is a direct cause of carcinoma remains controversial. However, some hypotheses have been proposed that the poor vascularity of the scar tissue facilitates the development of ulceration in the thin epidermis, making it more susceptible to changes and infection. The retained foreign body will result in changes in epithelial cells during the regeneration process. Dysplasia will occur when the repair process is repeated in chronic wounds, leading to carcinoma in local tissue [2, 3, 4].

The location of the wound by a foreign body is also a crucial factor resulting in carcinoma. The authors believe that location exposure to sunlight will increase the risk of the disease [4, 5]. Ozyazgan I [6] studied 92 patients with basal cell carcinoma, which is common in the elderly, poor wound healing, and exposed skin locations. These are all related to ultraviolet rays and become factors increasing the risk of cancer. Our patient suffered a metal foreign body wound under the scalp in the right temple area. As this is a location that is less covered and usually exposed to sunlight, it will raise the risk of cancer at the wound site.

Wozniak SE describes a patient with a war-related foreign body wound in his hand that had complications causing basal cell carcinoma. The authors believe that these wounds are related to the Marjolin degeneration process of epithelial cells and cause carcinoma in the long term [2]. Ebrahimzadeh (2013) described a case of a 44-year-old male patient with a metal fragment in the lower end of the femur while participating in the Iran-Iraq war, which, after 22 years, caused local bone cancer without any special clinical manifestations. The patient was examined periodically, and found a

bone-destroying lesion and the biopsy results showed local bone cancer. The patient underwent surgery to remove the tumor and replace the joint. The authors believe that the cause may be metal or lead poisoning which resulted in changes in the cells around the foreign body [6]. Our patient suffered from a fire injury for 50 years - long enough for the wound to change, causing local carcinoma.

CONCLUSION

Wounds retaining foreign objects can be found anywhere on the body. Foreign metal objects under the skin can cause carcinoma. Surgery to remove foreign bodies is necessary, especially those in skin areas exposed to sunlight. Surgery to remove foreign bodies prevents cancer and prolongs the patient's life.

Ethics: Research strictly complies with the regulations on research ethics of the Ministry of Health. Patients were on operations following the surgical procedures of Military Hospital 103 and the Ministry of Health. The patient's database has been approved for use and publication by Military Hospital 103. The authors commit that the research is carried out objectively and without conflicts of interest.

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