

Argon Plasma Coagulation for Giant Plexiform Neurofibromas

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INTRODUCTION:

Plexiform neurofibromas are complex tumors which are known to grow extensively into huge tumors giving rise to the term Giant Neurofibroma.

REPORT:

A 27yr old gentleman with giant plexiform neurofibromatosis of the right upper limb presented back to us with increased swelling and inability to lift the limb. He had history of prior excisions, but the tumor recurred and became hindersome to his daily activities. He still had good hand function. Surgery for repeated resection was postponed almost 2 years due to the covid pandemic leading to recurrence of large tumor. He underwent excision of neurofibroma with argon plasma coagulation (APC). 1.49kg of neurofibroma was removed from the forearm. Estimated blood loss was one liter requiring one pint packed cell transfusion.

Goals of surgery are to restore function, alleviate pain and improve cosmesis as symptoms are related to the size of the tumor. A major challenge of this surgery is blood loss as resection is difficult due to abundant malformed vessels such as abnormal venous sinuses, aneurisms and arteriovenous fistulas.[1] Recurrence is very common after resection requiring repeated resections. The usage of conventional diathermy is not effective due to the friable tissue making APC a better alternative. APC employs high frequency electric current and ionised argon gas to desiccate the tissue. The advantages of APC include control of superficial hemostasis up to 2-3mm depth.[2] Other advantages include non-contact application and creation of a uniformed area of hemostasis with thinner eschar.[2] Smoke is also reduced which is safer for healthcare workers given prolonged usage in these cases.

Image 1: Clinical pictures before resection in 2016 and 2021.



Image 2: APC use in this case.



CONCLUSION:

APC is one of the methods to minimize bleeding. Repeat resection when tumor size is small and more manageable is highly recommended.

REFERENCES:

- 1.Si-Ming Yuan. Surgical management of giant neurofibroma in soft tissue. Int J Clin Exp Med 2015;8(4):5245-5253.
- 2.Use of Electrosurgery and Argon Plasma Coagulation Therapeutic. ERBE Article 2011.