ejpmr, 2024, 11(4), 410-414

SJIF Impact Factor 7.065

EUROPEAN JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

www.ejpmr.com

Case Study

ISSN 2394-3211

EJPMR

EXCISION OF CERVICAL CYSTIC HYGROMA USING HYDROCOLLOID MATERIAL: CASE REPORT

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Article Received on 26/02/2024 **Article Revised on 16/03/2024** **Article Accepted on 06/04/2024**

ABSTRACT

Cystic hygroma or lymphangioma is a benign congenital malformation when the lymphatic vessels are abnormally infiltrated. This report presented the case of a14-years adolescent patient with a painless left-sided neck swelling extending to the right side. His history began when he was 9 years old, and the swelling gradually increased in size without a period of regression, and in the last two years it became large enough to extend to the right side. A large mass was observed in the submandibular and left submental regions. Upon palpation, a soft, painless, non-pulsating, freely moving mass was noted, measuring approximately 9*5 cm. Upon palpation, a soft, painless, non-pulsating, freely moving mass with a size of approximately 9*5 cm was noted. The mass was not attached to the overlying skin and was well illuminated with increasing size when the Valsalva maneuver was performed.The case was finally diagnosed as a cystic hygroma, and a surgical intervention was performed by excision this cyst using hydrocolloid material.

KEYWORDS: Cystic hygroma, lymphatic vessels, excision, hydrocolloid material.

INTRODUCTION

Cystic hygroma, also called cystic lymphangioma, is a congenital disorder that affects the lymphatic system.[1] It was first described in 1828 by Redenbacker and referred to as a moist tumor, term of hygroma coming from Greek and meaning a water-filled tumor.[2] About 50% of these deformities appear at birth, while most cases become evident by the age of two. These cystic are extremely rare deformities in adults, although the majority (95%) of cases occurring during adolescence.[3]

This benign cyst is often rare and arises from a congenital abnormality of the lymphatic vessels. The condition primarily manifests in the head and neck regions, although it has the potential to arise in any part of the body.[4,5] Additional anatomical locations where the occurrence of sites can be found, apart from the head and neck region, include the thoracic wall, shoulder, intra-abdominal area, pharynx, and mediastinum.[6]

These cysts, which constitute lymphatic malformations, vary in size and may sometimes reach several centimeters in diameter.[7] This cystic mass may be in the form of a unity or bilateral swelling in the neck, causing asymmetry.[8] A cystic hygroma in the neck takes the form of a large, deep, and widespread swelling, which may cause dysphagia, airway obstruction, or dyspnea, which requires immediate surgical intervention.[9,10]

Although surgical excision of the cyst is the best of choice treatment, the use of hydrocolloid injections can be another successful approach.[11] In this report we present a case of cervical cystic hygroma in a 14-year-old male who was treated surgically by cystic excision using hydrocolloid material.

CASE REPORT

A 14-years adolescent male patient was presented to ear, nose and throat ward at Kirkuk Teaching Hospital in northern Iraq. He had painless swelling in the neck on the left side extending to the right side (figure 1). His history began when he was 9 years, when his mother noticed a small swelling in the neck on the left side. Gradually, the size of the swelling increased without a period of regression, and in the last two years it became large enough to extend to the right side. This swelling was not related to speech difficulty, feeding, or voice change. The patient's condition was worsening due to coughing, and nothing relieved him. Body temperature and appetite were normal, without weight loss or night sweats. There was no history of any underlying medical condition, previous surgery, chronic medication use, or similar condition in his family. Upon general

examination, the patient appeared in good health, without breathing disorders and cachexia, and well hydrated. He had a normal distribution of hair without any dysmorphic feature in the face or elsewhere. As for inspection of the nose, ear, and throat, it was revealed that there was a large mass occupying the submandibular and left submental areas. The skin color was normal without any abnormal scars or lesions. By palpation, a soft, non-tender, non-pulsatile, freely moving mass measuring approximately 9*5 cm was noted. The mass was not attached to overlying skin and it transilluminated well with increased in size when performing Valsalva maneuver. Besides, by auscultation there was no bruit. As for ear and nose examination, it was normal with no evidence of cervical lymphadenopathy. Flexible endoscopy was normal, without cranial nerve deficit. Based on above and results of neck ultrasound, color Doppler ultrasound, and neck MRI, final diagnosis of cystic hygroma was made by a consultant otolaryngologist (Dr. Tunjai Namiq Faiq), and he decided to perform a surgical intervention to treat the case.

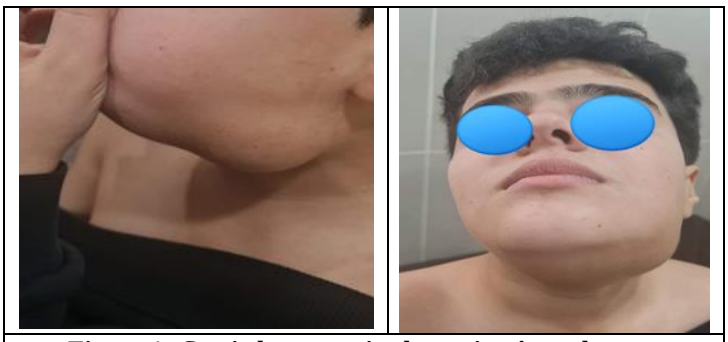

Figure 1: Cystic hygroma in the patient's neck area.

Surgical Steps

Routine investigation, a complete blood count, creatinine, liver function tests, and a chest X-ray were all within normal ranges, indicating that the patient was ready for surgery. Risk approval was obtained primarily to account for incomplete cyst resection and neurovascular injury. General anesthesia was administered to the patient, and surgery done in a supine position, with his head extended and inclined to the right side. Following asepsis, the skin was infiltrated with xylocaine and adrenaline, and an incision was made in the skin using two fingers below the mandible jaw, extending from the posterior border of sternomastoid muscle to the anterior edge of sub mental area as shown in Figure (2).

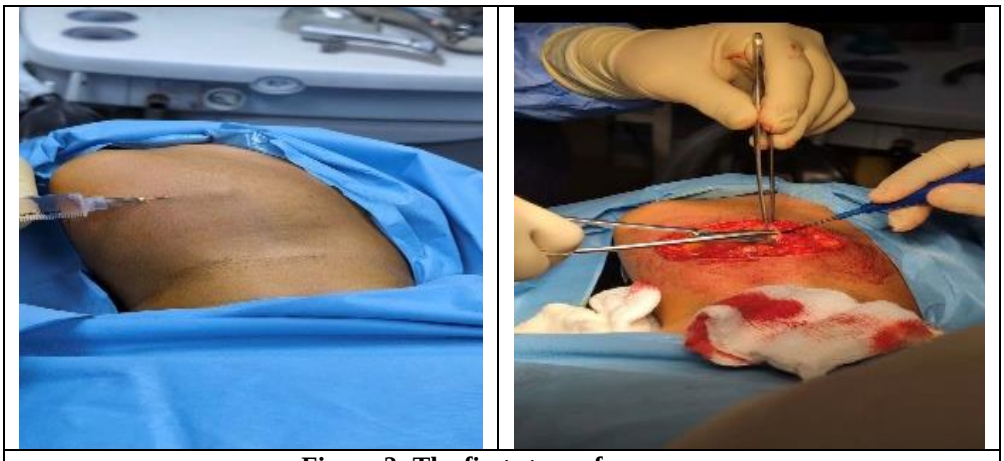

Figure 2: The first steps of surgery.

An incision was made on the skin and subcutaneous tissue at subplatysmal level with meticulous hemostasis, ensuring careful control of bleeding. The mass was fully exposed and aspirated. The cystic fluid was aspirated using an intradermal syringe. A single-use sterile syringe (10 mL) was used to suction Intralesional fluid. Subsequently, we kept the needle in the light of the lesion and injected, through a second sterile syringe as in figure (3).

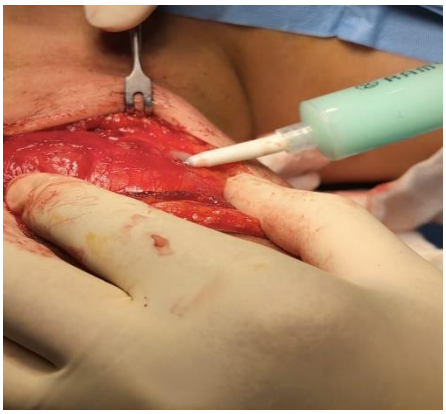

Figure 3: injection of hydrocolloid material after aspiration of fluid.

The hydrocolloid material used in this case was a hydrocolloid dental impression, which was remained in the cavity for duration of one minute. Our team conducted the procedure in a sterile surgical environment. The volume of the hydrocolloid impression material was equal to the amount of liquid aspirated from the lesion. After the material solidified, we began to carefully separate the mass from the surrounding tissue using precise blunt dissection techniques, ensuring that nearby structures were not harmed, as seen in figure (4). Finally, mass completely excised as in figure (5).

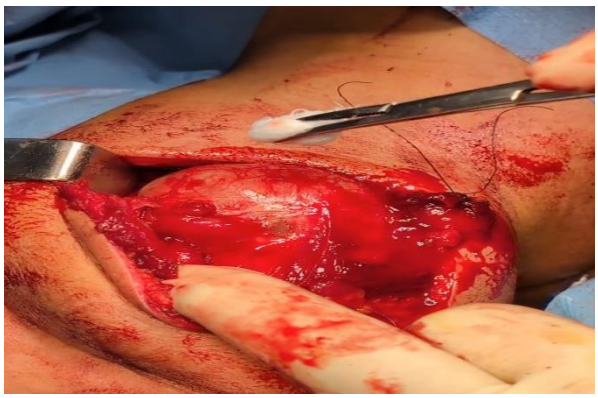

Figure 4: Removing the mass from surrounding tissue.

The subcutaneous tissue was sutured with 3 vicryl, while the skin was sutured using silk. The postoperative period was uneventful, and the patient was discharged from the hospital after 2 days. The patient underwent a follow-up appointment one week later, during which the sutures were extracted. On the day of the surgery, patient just complained of mild discomfort and no further complications. On the seventh day, the excision area seemed to be healing and non-tender to palpation.

The histopathology revealed the presence of collagenous stroma with dense lymphocytic infiltration, broad lymphatic channels lined by endothelial cells, and these features are consistent with cystic hygroma.

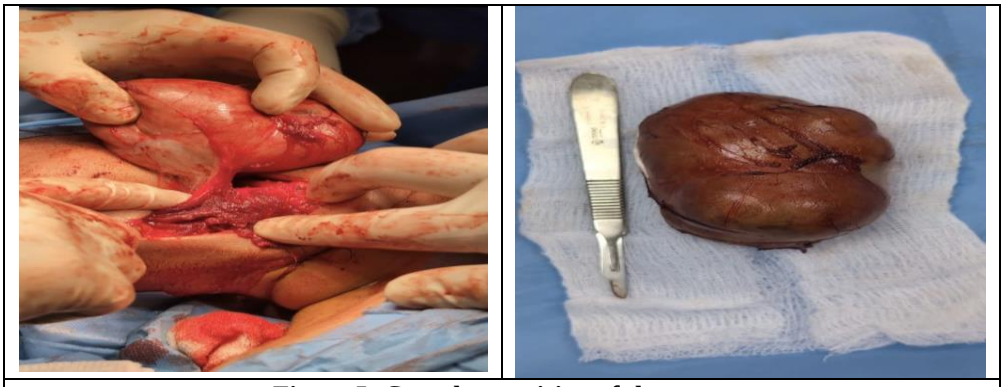

Figure 5: Complete excision of the mass.

DISCUSSION

Cystic hygromas are benign growths that develop in the lymphatic system, they typically occur in young children and are most effectively treated with surgical intervention.[12,13] The prognosis for this illness is good prognosis as long as the mass is completely excised. They are commonly believed to originate from the remaining embryonic lymphatic tissue that still has the ability to grow and multiply. They exhibit a growth pattern characterized by sprouting and possess the ability to surpass anatomical limits, and they can occur in virtually any anatomical location.[14,15] Cervical lymphangioma develops due to a congenital anomaly in the lymphatic system during its development. Cystic hygroma is a benign condition, although the cause in adults remains uncertain.[16] The head and neck region is the most frequent location of origin, with cystic hygroma representing 75% of lymphatic anomalies. It typically manifests as painless swelling characterized by an indistinct lesion, commonly found in the posterior triangle of the neck.[17,18] Cystic hygromas (lymphangiomas) are commonly classified by authors into three distinct categories: lymphangioma simplex, characterized by thin-walled capillary lymphatic vessels; cavernous lymphangiomas, characterized by dilated lymphatic spaces; and cystic hygroma, characterized by cysts of varying sizes.[19,20] Dysphagia, airway impairment, spontaneous bleeding, and secondary infection are the consequences linked to cystic hygroma.[21] Small lesions that don't cause any symptoms can be watched over time, even though cosmetic deformities are typically the purpose for therapy.[22] Complete surgical excision is still the most common treatment option; however, it can be challenging to identify and remove them if they extend into the mediastinum or involve nearby neurovascular structures.[23] Paresis or post-excision neurological paralysis may result; additional frequent side effects include bleeding, infection, and discharge.[24,25]

CONCLUSION

In the presented case, complete excision of cystic hygroma was achieved, with the use of hydrocolloid material, without postoperative complications or recurrences were reported. Therefore, it is recommended to use this procedure to treat cervical hygroma, as it is the best treatment option.

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