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Case Report

Bleomycin Sclerotherapy for Morel-Lavallée Lesion of Axilla in a Child

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Abstract

Background: Morel-Lavallee lesion (MLL) is a rare entity and little is known on the management of these lesions in children.

Case Presentation: 15 months old boy presented with 3 months history of right axillary swelling. MRI scan showed multiple macro and micro cysts with fluid-fluid levels. Aspiration of all large cysts revealed a dark brown fluid within. Excision biopsy of one of the superficial cysts showed an organised haematoma with a pseudo-capsule with no lymphoid tissue, suggesting a Morel-Lavallee lesion (MLL). Bleomycin (total dose of 0.5 mg/kg) was diluted with normal saline and instilled into all large cysts with ultrasound guidance. The entire swelling disappeared in a month with no recurrence seen in a year.

Conclusion: Bleomycin sclerotherapy can be an effective treatment for MLL in children, as observed in our case.

Keywords: *Morel-Lavallee Lesion; Bleomycin; Sclerotherapy; Axilla; Child*

Background

Morel-Lavallée lesions [MLL] are closed degloving injuries that result from shearing of soft tissues separating sub-dermal fat from underlying fascia. It was first described in 1848 by Victor-Auguste-François Morel-Lavallée (1811 - 1865) [1]**.** Although these lesions are well described, diagnosis is often delayed or missed; especially in children as such they are rare. Furthermore, there are no universally accepted treatments or regimes. The youngest case of MLL was described in a 12 months old girl which was managed with serial ultrasound-guided aspirations and compression bandages [2]. We describe MLL in a 15 months old boy successfully treated with intralesional Bleomycin sclerotherapy.

Case Presentation

A 15 months old boy presented with 3 months history of spontaneous, progressive, painless swelling in the right axilla. The child was previously fit and well. On examination, the swelling was non tender, diffuse without well-defined edges, measuring 13 x 12 cms (Figure

1). The overlying skin appeared normal. An ultrasound scan revealed multiple fluid filled cystic spaces. Patient was referred to us with an initial diagnosis of cystic hygroma. MRI scan showed multiple macro and micro cysts with fluid-fluid levels and hyper-intense signal on T1, rather unusual for a cystic hygroma. Aspiration revealed dark brown fluid in all the macro cysts. FNAC revealed old blood with no tumour cells. Excision biopsy of one of the superficial large cysts showed an organised haematoma with a pseudo-capsule but with no lymphoid tissue. Initially no history of trauma was given but later questioning the parents, they recalled pulling of the right arm of the patient forcefully by his elder brother prior to the onset of the swelling. Thus, with the prior history of trauma and no lymphoid tissue seen on histopathology the likely diagnosis of MLL was made.

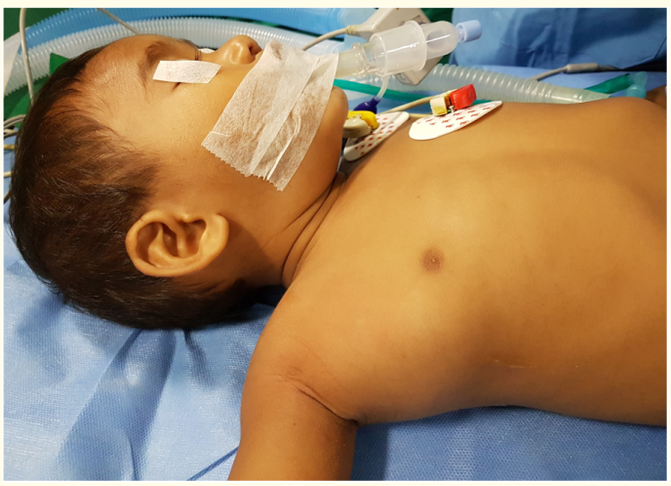

Figure 1: *Right axillary swelling of the patient prior to aspiration (Lateral view).*

Bleomycin (total dose of 0.5 mg/kg) was diluted with normal saline and instilled into all large cysts with ultrasound guidance (Figure 2). Prophylactic antibiotics were administered (Augmentin) and continued orally for 5 days along with oral analgesia (Paracetamol). The swelling disappeared within a month. Patient was completely asymptomatic after 12 months with no signs of recurrence (Figure 3).

Figure 2: *Ultrasound image of instillation of Bleomycin into one of the macro cysts in our patient.*

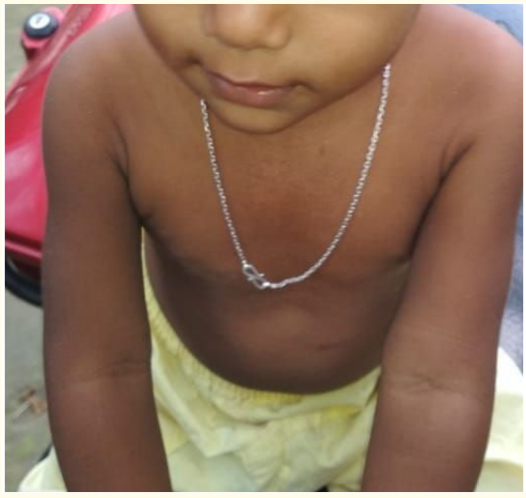

Figure 3: *Picture of patient 3 months after Bleomycin instillation.*

Discussion

MLL is a closed internal degloving injury resulting from a shearing force applied to the skin and the underlying tissues separating the subcutaneous fat from the deep fascia and thereby rupturing the capillaries, vessels and lymphatics in the plane [3] and subsequent haematoma or collection (Figure 4). These lesions can become established and encapsulated and may or may not resolve spontaneously after a long time. Differential diagnosis includes Lipoma, vascular malformation, lymphocele, cystic hygroma, and lymphovascular malformations [4].

Ultrasound scan features are based on the age of haematoma and focal anechoic to isoechoic complex collections are seen. CT scan of a Morel-Lavallée lesion shows fluid-fluid level resulting from sedimentation of blood components and may or may not contain a capsule surrounding the lesion. MRI is the preferred imaging modality of choice, as the lesions are better visualised with soft-tissue contrast enhancement and in children [5], it may mimic a cystic hygroma that has bled within.

Definitive diagnosis in children is very difficult. MLL usually contain haemolymph and over period of time organise and develop pseudocapsules. MLL are classified into 6 types and types 3 and 6 exhibit thick capsules [6]. It can be difficult to distinguish cysts of MLL from those seen in cases of cystic hygroma in children. In our patient, the site of lesion, age at presentation, painless nature of swelling and the radiological appearance of the swelling support the diagnosis of cystic hygroma as well as MLL. However, the history of trauma preceding the onset of swelling along with the excision biopsy of cyst that did not show any lymphoid tissue support the diagnosis of MLL rather than a cystic hygroma in our patient.

Multiple modalities of treatment for MLL have been described; Conservative management (e.g. compression bandages), aspirations, debridement and surgical drainage, sclerodesis with doxycycline, talc, alcohol, cyanoacrylate glue and fibrin glue, but they have been largely described in the adult literature [2]. MLL as such are rare in children and the largest series of MLL in children was reported from Mayo clinic, where they recommended initial aspiration of MLL and if >50ml was noted then to proceed for open surgical drainage [7]. The youngest case of MLL was described in a 12 months old girl which had been treated with repeated aspirations (4 in total) and pressure bandages over a period 2 weeks [2]. Ours is the first case, we believe to report on use of Bleomycin (single session sclerotherapy) for MLL

successfully without any complications in a young child. The Bleomycin sclerotherapy dose used in our patient was minimal [0.5 ml/kg] and at this dose it has been shown to be effective and safe in children for other pathologies such as cystic hygroma, with fever and local cellulitis as the complications reported [8].

Conclusion

Morel-Lavallée lesions (MLL) in children are rare and the diagnosis is often delayed. Bleomycin sclerotherapy can be a safe and effective treatment for MLL in children, as observed in our case.

Consent

Written informed consent was obtained from the parent of the patient for publication of this case report and any accompanying images.

Ethics Approval

Ethical approval is not required at our institution to publish an anonymous case report.

Declaration of Conflicting Interests

The authors declare that there is no conflict of interest regarding the publication of this case report.

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