Chronic expanding hematoma, ruptured through the skin 53 years after buttock contusion

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A B S T R A C T

INTRODUCTION: Chronic expanding hematoma is a relatively rare complication of soft tissue trauma and often clinically mistaken for a malignant neoplasm.

PRESENTATION OF CASE: A 71-year-old female presented with a chronic expanding hematoma that ruptured through the buttock skin 53 years after the original contusion. The diagnosis of CEH was made based on the results of the biopsy, physical examination, and CT. The tumor was completely excised, and the defect was covered with a rhomboid flap.

DISCUSSION: There are no reports of lesions rupturing through the skin. Almost all instances of chronic expanding hematoma previously reported in the English literature have a history ranging from 1 month to 20 years. There is a report of a thorax CEH that ruptured into the lung parenchyma after 24 years, so it is conceivable that other subcutaneous CEHs could break through the skin several decades after their inception.

CONCLUSION: Once this lesion has ruptured, its differentiation from other entities becomes more complicated.

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1. Introduction

Chronic expanding hematoma (CEH) is a relatively rare complication of significant soft tissue trauma. It presents as a gradually enlarging subcutaneous mass, which may be mistaken clinically for a malignant neoplasm.1 We present herein a patient with a CEH that ruptured through the skin of the buttock 53 years after the original contusion. We also review the differential diagnosis of this condition.

2. Case report

A 71-year-old woman with no significant medical history was referred to the Department of Plastic and Reconstructive Surgery, Showa University Hospital, in March 2012 with a bleeding tumor on her right buttock. Ever since she was hit in the right buttock with a ball in high school, a persistent, small subcutaneous induration had been present at the site. Although it gradually enlarged over time, it did not cause her any other problems for 53 years. In February 2012 she had a sudden oozing of blood, with no apparent cause, from the buttock skin above the induration. A few days later, a tumorous lesion broke through the bleeding skin. Although a malignant neoplasm such as angiosarcoma or squamous cell carcinoma was suspected by the treating dermatologists (also at Showa University Hospital), an incisional biopsy revealed a fibrous capsule with a large amount of hemosiderin deposition, indicating a benign cystic lesion.

The patient was referred to the Department of Plastic and Reconstructive Surgery after the biopsy. Her physical examination revealed a bleeding tumor, measuring 5 cm × 5 cm, on the right buttock (Fig. 1). Her blood count and coagulation profile were normal. Computed tomography (CT) demonstrated a solid, homogenous mass in the subcutaneous tissue, with iso-density to muscle and partial ring enhancement (Fig. 2). A diagnosis of CEH was made based on the results of the biopsy, physical examination, and CT.

The tumor was completely excised with a margin of 1 cm on the deep fascia, and the defect was covered with a rhomboid flap. Histopathological examination revealed a cavitary mass lined with clot, inflammatory cell infiltrate, and cholesterol clefts, indicating chronic hematoma (Fig. 3). The wall of the cavity was composed of thick fibrous tissue with hemosiderin-laden macrophages.

The patient's postoperative course was uneventful, and the lesion had not recurred as of January 2013, although the operative scar healed in a slightly hypertrophic manner (Fig. 4).

3. Discussion

The clinical importance of subcutaneous CEH lies in its differential diagnosis, which includes hemangioma, dermoid cyst,
chronic abscess, and soft tissue sarcoma.\textsuperscript{1,2} CEH is often mistaken for other entities that present as enlarging masses following minor trauma, including arteriovenous fistula, nodular fasciitis, and ossifying myositis.\textsuperscript{2}

The pathogenesis of CEH seems to be same as that of chronic subdural hematoma.\textsuperscript{2} Chronic inflammation and increased capillary permeability caused by trauma or surgery are implicated, with a critical clot volume needed for enlargement to occur. The breakdown products of erythrocytes, hemoglobin, leukocytes, and other solid blood elements induce the formation of a fibrous capsule surrounding the hematoma; this capsule, in turn, leads to the growth of the hematoma.

To the best of our knowledge, subcutaneous CEH has never before been reported to persist over an interval as long as 53 years. Almost all instances of CEH previously reported in the English literature have a history ranging from 1 month to 20 years,\textsuperscript{1,3} and no lesions have ruptured through the skin. There is a single report of a thorax CEH that ruptured into the lung parenchyma after 24 years,\textsuperscript{4} so it is conceivable that other subcutaneous CEHs could break through the skin several decades after their inception. A ruptured CEH complicates the differential, as it is easily confused with a malignant tumor or a vascular lesion.

Because we have previous experience of CEH, we were able to make the diagnosis of CEH based on the results of the enhanced CT scan and the previous biopsy. However, magnetic resonance imaging is actually the most valuable diagnostic tool.\textsuperscript{1,2,5} In typical cases, T2-weighted imaging of the lesion demonstrates a mosaic pattern with heterogeneous signal intensity, surrounded by a thick pseudocapsule of material with a very low-intensity signal.\textsuperscript{5}

Because incomplete excision or aspiration of fluid could lead to recurrence or continued growth, surgical excision is critical.\textsuperscript{1} Total resection, including the fibrous pseudocapsule, with a small margin is recommended to avoid recurrence. This is followed by tension-free closure with obliteration of any subcutaneous dead space.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{image1.png}
\caption{Preoperative photograph of the mass over the right buttock.}
\end{figure}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{image2.png}
\caption{Enhanced computed tomography, showing a homogenous mass with partial ring enhancement (arrow).}
\end{figure}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{image3.png}
\caption{Hematoxylin and eosin staining of the resected lesion. Left: low-power image (magnification \times 40) showing the hematoma breaking through the skin. Right: high-power image (magnification \times 200) showing the hematoma (lower part) and surrounding pseudocapsule (upper part).}
\end{figure}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{image4.png}
\caption{Postoperative photograph of hypertrophic healing at the incision site.}
\end{figure}
4. Conclusion

The CEH presentation in our patient is unusual, but it is important to recognize the possibility that CEH may rupture even when it has been present for several decades. Once this lesion has ruptured, its differentiation from other bleeding tumors becomes more complicated.

Conflict of interest statement

None.

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None.

Ethical approval

Patient consent form is attached to the submitted documents.

Author contributions

Case report writing, data collection, and discussion writing were done by D Morioka. Discussion writing was carried by K. Umezawa and F. Ohkubo. Ohkubo also supervised.

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