PAIN MEDICINE CASE REPORTS

ISSN 2768-5152
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Volume 6, Number 5, pp. 195-197

# A Resolving Hematoma Causing Cortical Hand Syndrome Mistaken as a Hemorrhagic Tumor in a Patient Presenting for Sacroiliac Joint Injection: Case Report

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**Background:** Many diseases mimic tumors radiographically and clinically.

**Case Report:** Here we are presenting a challenging case. A 71-year-old patient who presented with chronic back pain was scheduled to have a sacroiliac joint injection. In the weeks before his injection, he developed isolated right-hand weakness and was confirmed to have a resolving hematoma that caused cortical hand syndrome, confirmed by pathology after surgery, and mimicked a tumor radiographically and clinically.

**Conclusion:** In conclusion, it is very important to keep a broad differential when encountering challenging cases.

**Key words:** Case report, hematoma, sacroiliac joint injection, tumor

## BACKGROUND

There are a variety of conditions that mimic tumors radiographically and clinically, such as autoimmune, vascular and infectious diseases (1). MRI and CT studies provide important values in differentiating these conditions in the appropriate contexts. Differentiating tumors from tumor-like lesions can be even more challenging when MRI is not possible to obtain and CT study is limited in providing enough clues. Cortical hand knob stroke, also called cortical hand syndrome is a well-defined stroke syndrome that involves the precentral cortical sulcus representing hand region in the primary motor cortex and causes isolated hand weakness (2). Here we are presenting a challenging case that a resolving hematoma mimicked tumor radiographically and clinically in a patient who developed cortical hand syndrome while waiting to repeat sacroiliac joint injection.

## CASE

A 71-year-old white man with a history of atrial fibrillation (on apixaban) and congestive heart failure (implantable cardioverter defibrillator [ICD] placement), hypertension, hyperlipidemia, and diabetes presented with chronic back pain and was scheduled to repeat sacroiliac injection, as he has received significant relief from this injection.

Four weeks prior to the injection being performed, the patient developed right-hand weakness when he woke up one morning. He did not present to any other health care provider for evaluation in the interim. Physical exam was notable for distal weakness of right

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Disclaimer: The patient has provided consent for this case to be published. We declare that there are no copyrighted figures. Both LL and MDB contributed to the writing of this manuscript, read, and approved the final manuscript; PH contributed to the picture and figure legend. Data sharing is not applicable to this article as no datasets were generated or analyzed during the current study.There was no external funding in the preparation of this manuscript.
Conflict of interest: The patient has agreed with the publication. Each author certifies that he or she, or a member of his or her immediate family, has no commercial association (i.e., consultancies, stock ownership, equity interest, patent/licensing arrangements, etc.) that might pose a conflict of interest in connection with the submitted manuscript.

Accepted: 2022-07-07, Published: 2022-09-31

hand: 3 of 5-grade performance on wrist flexion, wrist extension, finger flexion, finger extension and finger abduction, though there were no sensory deficits and reflexes were normal. Computed tomography (CT) of the cervical spine with and without contrast showed multilevel degenerative changes that did not explain his symptoms. CT of the head with and without contrast showed a left fontal 1.5 x 1.5-cm peripherally hyperdense lesion at the gray-white matter junction, concerning for primary hemorrhagic tumor, metastatic hemorrhagic tumor, cavernoma or resolving intraparenchymal hemorrhage (Fig. 1A, 1B). Magnetic resonance

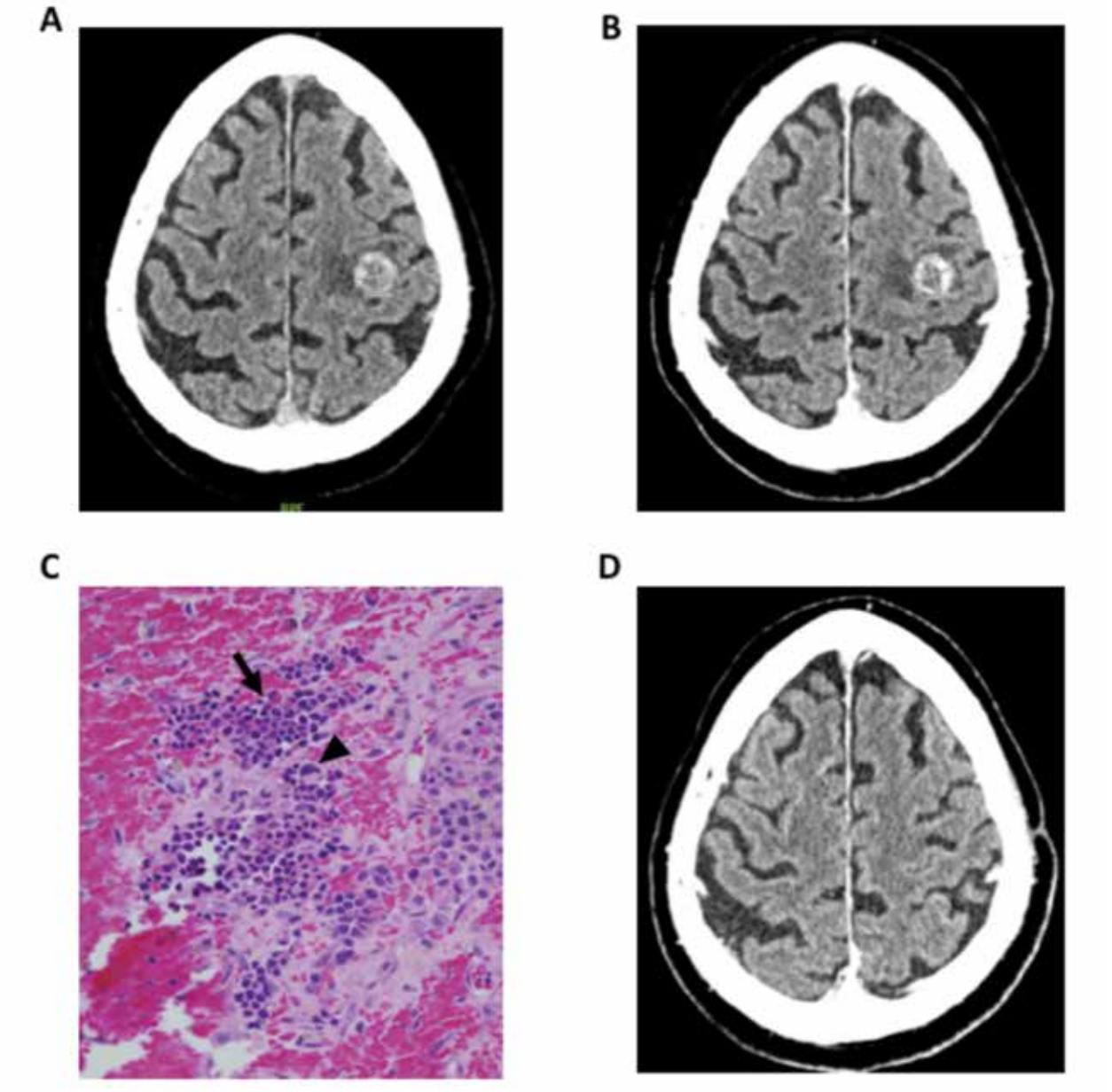


Fig. 1. There was a hyperdense lesion at the left frontal lobe, representing a cortical hand knob, confirmed as a resolving hematoma. A: CT head without contrast. B: CT head with contrast. C: hematoxylin and eosin at X20, foci of extramedullary hematopoiesis within the left frontal lobe; A marked population of erythroid precursors (arrow) with a prominent megakaryocyte (arrowhead). D: Follow-up CT head with contrast showed postsurgical changes without reoccurrence.

imaging (MRI) of the brain and cervical spine were not performed due to his ICD not being MRI-compatible. He had CT of the chest, abdomen, and pelvis with and without contrast, which ruled out systemic malignancy. His weakness did not improve over time, which prompted a craniotomy and resection of this lesion. Pathology confirmed a resolving hematoma: background of blood products, hemosiderin-laden macrophages, and gliosis (Fig. 1C). The strength of his right hand improved rapidly after surgery, and follow-up CT of the head showed postsurgical changes without suspicious enhancement anymore (Fig. 1D).

## DISCUSSION

Many diseases mimic tumors radiographically and clinically, including demyelinating conditions (tumefactive multiple sclerosis), vascular diseases (hematoma, infarction, and vascular malformation), and infections (abscess) (1). Differentiating tumors from tumor-like lesions can be very challenging especially when MRI is not possible to obtain. Our patient did not have imaging until 4 weeks after the onset of his symptoms. If he had presented earlier, CT of the head would have favored acute intracranial hemorrhage as he has multiple risk factors for vascular diseases and he is taking apixaban. Unfortunately, he finally had to receive a craniotomy to remove the resolving hematoma that could not be differentiated clinically and radiographically.

Of note, this patient presented with cortical hand knob stroke (cortical hand syndrome), which is a well-defined stroke syndrome that involves the precentral cortical sulcus representing the hand region in the primary motor cortex. It is more often seen in ischemic (2), but less common in hemorrhagic, stroke (3). Both cervical and cerebral imaging is required to avoid missing the diagnosis.

## CONCLUSIONS

In conclusion, it is very important to keep a broad differential and perform a thorough work-up when encountering challenging cases.

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