

## Peer Review File

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### Reviewer A

Comment: In my humble opinion that this is a well written and well detailed case report. Authors reasonably sought to explain this phenomenon. Conclusion is too long and should be shorter ideally. In order to improve the documentation author should include other sequences of MRI and ideally an axial slice as well.

Reply: I shortened the conclusion (page 9, line 209-216) and introduced new images, included two axial ones.

Changes in the text: The patient experienced a SSH triggered by the fragility of the spinal arachnoid mater, resulting in the breakdown of the radiculomedullary veins in the context of MCTD and a perioperative increase in IAP. In this report, we describe the first case of spontaneous SSH associated with MCTD.

Two main criteria are considered for intervention: neurological evolution and signs of myelopathy on MRI. A conservative treatment is recommended for patients with improving neurological status.

We recommend caution in patients with connective tissue diseases who undergo thoracic or abdominal surgery and be aware for neurosurgeons that SSH is possible although rare and that conservative treatment may be considered.

### Reviewer B

I have made a few editorial suggestions, including to vitally look up the below paper and establish whether your case report is in fact, the first reported case of SSH associated with MCTD

Reply: already answered in reply 8

Changes in the text: \*\*\*\*\*

Comment 1: Phrases should be written in full at first usage of these acronyms

Reply 1: I changed the acronyms in full (page 2, line34)

Changes in the text: To report the unique occurrence of spinal subarachnoid hemorrhages (SSH) in a patient with anti-U1 ribonucleoprotein (U1-RNP) and anti-nuclear antibodies (ANA) positive mixed connective tissue disease (MCTD) triggered by abdominal surgery.

Comment 2: It should be clear that patient did NOT undergo spinal anaesthesia from the case description.

Reply 2: I wrote a new sentence where I specified that the patient did not undergo spinal anaesthesia. (page 2, line 39)

Changes in the text: A spinal anesthesia was not performed.

Comment 3: Check the suitability of the tense

Reply 3: I changed the tense of the verb (page 2, line 46)

Changes in the text: The decision to undergo a conservative treatment

Comment 4: Define timeline relative to when patient presented. For example, 'since 2 years prior to presentation...'

Reply 4: I defined timeline relative to when patient presented (page 5, line 132-135)

Changes in the text: The patient revealed a history of hypothyroidism and MCTD, since three years prior to presentation with positive U1-RNP and ANA. MCTD was under therapy with prednisolone and rituximab for a short time in the first year due to polyarthritis and joint pain. The therapy was then stopped in the absence of symptoms. At the time of hospital admission MCTD was quiescent.

Comment 5: Typo: perfomr (perform)

Reply 5: changed to perform (page 5, line 142)

Changes in the text: The patient was intubated and sedated because of uncontrolled pain despite high dose analgesics and to perform a magnetic resonance imaging (MRI).

Comment 6: Typo: Folloqing (following)

Reply 6: changed to following (page 5, line 158-159)

Changes in the text: A follow-up MRI was not performed during the following days due to the rapid improvement in the neurological examination.

Comment 7: Report report (duplication)

Reply 7: I deleted the duplication (page 6, line 165)

Changes in the text: We report a case of spontaneous SSH occurred after abdominal surgery in the context of MCTD.

Comment 8: Is this truly the first case of spontaneous SSH associated with MCTD? Authors may want to have a look at this paper by Alexander et al

Reply 8: Mixed connective tissue disease has features of three other connective tissue diseases: SLE, scleroderma and polymyositis. Sjögren Syndrome is not MCTD, it can be associated with, but it's not MCTD, thus we describe the first case of spontaneous SSH associated with MCTD. (page 7, line 211)

Changes in the text: no changes