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Paradoxical herniation after decompressive craniectomy provoked by mannitol: A case report

Editor and Reviewer comments:

Reviewer #1:

Scientific Quality: Grade C (Good)

Language Quality: Grade C (A great deal of language polishing)

Conclusion: Major revision

Specific Comments to Authors: The authors present very interesting and from the educational point quite valuable paper describing an exceptional complication – paradoxical herniation after decompressive craniectomy provoked by mannitol. Abstract: Background : in the sentence However, Paradoxical transtentorial herniation – the use of capital letter in the word Paradoxical is incorrect. Case summary: The authors speaks about decompressive craniectomies, but on the CT scans provided only the right sided decompressive craniectomy can be seen. Therefore either correction or explanation is needed. Also the need for prolonged mannitol administration (7 days after surgery requires explanation (too long in the reviewer's opinion in conscious patient with favourable results when considering CT scans and clinical picture). However I fully agree with the treatment measures used by the authors. The key words are well selected Main text: Introduction: The authors provide adequate introductory background for their case report. However the end of the sentence Currently, only a few cases have reported that paradoxical herniation may occur in the absence of CSF is not easily comprehensible – maybe the final part should be in the absence of CSF drainage Case Presentation: the points for discussion or for inclusion in the Case Report – was CT angiography performed or at least postcontrast CT evaluation performed, because the suspicion of AVM was quite high? If yes, it should be added to the report, or at least a short comment about the reason why postcontrast CT (or CT angio) has not been performed should be added. The grammar error his left limb was hemiplegic has to be corrected. The CT scans documenting the clinical deteriorations are well selected and document both the midline shift and transtentorial uncal herniation. The clinical decision making process is well described. However the dynamics of Na⁺ blood level may be included to the report (maybe the initial hyponatremia 130 mmol/l is one of the contributing factors). However although the reviewer is not a native speaker of English language the sentence .. nervous system continued to improve and was changed within a few day from a supine position to the Fowler's position. The final sentence The 2-mo outpatient follow-up revealed a good prognosis – should describe the outcome in more details (initial hemiplegia). Discussion part : Generally well written, but numerous spelling and syntactic errors should be corrected by a native speaker. Final statement : The case report is of educational value and therefore should be considered for publication. However meticulous correction should be undertaken including the language review by a native speaker.

- 1) **Abstract: Background : in the sentence However, Paradoxical transtentorial herniation – the use of capital letter in the word Paradoxical is incorrect.**

Re: Thank you very much for your reminder. The spelling of the full text of this manuscript

has been revised again.

- 2) **Case summary: The authors speaks about decompressive craniectomies, but on the CT scans provided only the right sided decompressive craniectomy can be seen. Therefore either correction or explanation is needed.**

Re: Thank you very much for your suggestion. We have identified a decompressive craniectomy on the right side (lines 31-323) .

In a coma, the patient was given emergency vascular malformation resection, hematoma removal, and the right decompressive craniectomy (line 31-332) .

- 3) **Also the need for prolonged mannitol administration (7 days after surgery requires explanation (too long in the reviewer's opinion in conscious patient with favourable results when considering CT scans and clinical picture). However I fully agree with the treatment measures used by the authors.**

Re: Thanks for your suggestion. The peak of cerebral edema is 3-5 days after cerebral hemorrhage, lasting about 2 weeks. This patient has a cerebral infarction in the surgical area, so we prolonged mannitol administration.

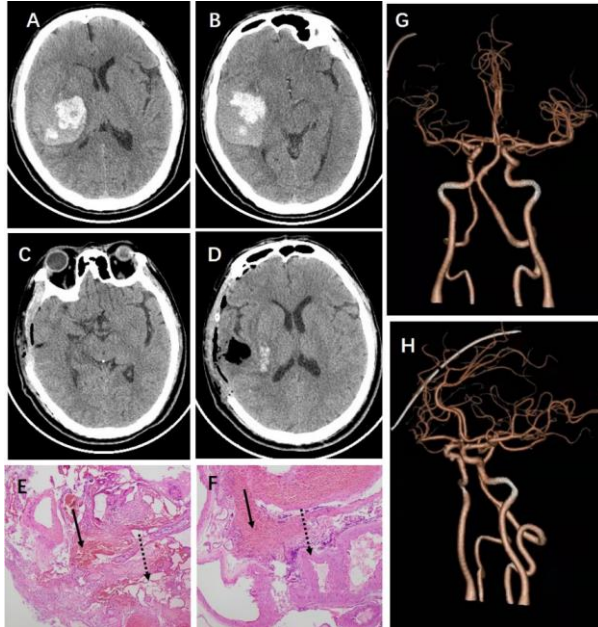
- 4) **However the end of the sentence Currently, only a few cases have reported that paradoxical herniation may occur in the absence of CSF is not easily comprehensible – maybe the final part should be in the absence of CSF drainage.**

Re: Thank you very much for your reminder. The spelling of the full text of this manuscript has been revised again (lines 6059-604).

Currently, only a few cases have been reported that paradoxical herniation may occur in the absence of CSF drainage, which is somewhat different from our case (lines 6059-60-61).

- 5) **Case Presentation: the points for discussion or for inclusion in the Case Report – was CT angiography performed or at least postcontrast CT evaluation performed, because the suspicion of AVM was quite high? If yes, it should be added to the report, or at least a short comment about the reason why postcontrast CT (or CT angio) has not been performed should be added.**

Re: Thank you very much for your reminder. The CT angiography after operation shows normal cerebral vessels (Figure 1G and H) (lines 7675-7978).



The head CT shows that the hematoma has been completely cleared, and the midline is almost in the middle (Figure 1C and D) . The CT angiography shows normal cerebral vessels (Figure 1G and H) (lines 7675-7978).

6) **The grammar error his left limb was hemiplegic has to be corrected.**

Re: Thank you very much for your reminder. The grammar error has been corrected (lines 7574-7675).

On the first day after the operation, the patient was fully awake with normal communication and directional movement of the right limb but had left hemiplegia (lines 7574-7675).

7) **However although the reviewer is not a native speaker of English language the sentence .. nervous system continued to improve and was changed within a few day from a a supine position to the Fowler's position.**

Re: Thank you very much for your reminder. The spelling of the full text of this manuscript has been revised again (lines 116-118).

The neurological function of the patient continued to improve, and the patient was successfully changed from a supine position to the Fowler's position within a few days (lines 116-118).

8) **The final sentence The 2-mo outpatient follow-up revealed a good prognosis – should describe the outcome in more details (initial hemiplegia).**

Re: Thank you very much for your reminder. We have described the outcome in more detail (lines 1212-123).

The 2-mo follow-up revealed a good prognosis with mild hemiplegia on the left side (muscle strength grade 4) (lines 1221-123).

- 9) **However the dynamics of Na⁺ blood level may be included to the report (maybe the initial hyponatremia 130 mmol/l is one of the contributing factors).**

Re: Thanks for your suggestion. We have reported the dynamics of Na⁺ blood level (lines 95-96).

On the 8th day after the operation, examination of blood electrolyte showed sodium concentration (132 mmol/L) and chlorine concentration (95.6 mmol/L) (lines 95-96).

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Science editor:

This manuscript reports an exceptional singularity-paradoxical herniation after decompressive craniectomy provoked by Mannitol. The manuscript mentions decompressive Craniectomies, but on the CT scans provided only the right sided decompressive craniectomy can be seen, which need further clarification. Please include more cases in the discussion section and revise the English writing.

Language Quality: Grade B (Minor language polishing)

Scientific Quality: Grade B (Very good)

1. **The manuscript mentions decompressive Craniectomies, but on the CT scans provided only the right sided decompressive craniectomy can be seen, which need further clarification.**

Re: Thank you very much for your suggestion. We have confirmed that it is decompressive craniectomy on the right side (lines 31-33) .

In a coma, the patient was given emergency vascular malformation resection, hematoma removal, and the right decompressive craniectomy (line 31-33) .

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2. **Please include more cases in the discussion section and revise the English writing.**

Re: Thank you very much for your suggestion. We have cited one reference in the discussion section(line 137). In addition, we have performed further language polishing.

The difference is that the symptoms are mild, slow to deteriorate, not life-threatening, and usually occur several months after decompressive craniectomy[14, 15] (line 137).

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