Author's response to reviews

Title: Complex interventional treatment in a patient with atrial fibrillation and stroke caused by large carotid artery thrombus: a case report

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Author's response to reviews: see over
Thank You for sending us review of the article no 2929902031407902 “Complex interventional treatment in a patient with atrial fibrillation and stroke caused by large carotid artery embolus” submitted to BMC Neurology. The manuscript was revised and improved according to the comments of the reviewers. I also would like to submit the improved version of the article to BMC Neurology for publication. The point-by-point response to the comments send us with the review below:

Comment 1:

Answer:
The above mentioned reference was incorporated into the text of the discussion with short presentation of the results to provide a more balance paper (as suggested).

Comment 2.
Page 1 line 6: thrombectomy and local regional thrombolytic treatment are recommended in strictly selected patients who...

Answer:
After this sentence, the reference position was implemented related to the current guidelines concerning early management of patients with acute ischemic stroke /Jauch EC, Saver JL, Adams HP Jr et al. Guidelines for the early management of
Comment 3
Was a delayed phase CT-angio done? how did the authors confirm the clot extended from the CCA to the TICA?

Answer:
The delayed phase angio CT is performed in our center routinely.
The confirmation of the final progression of the thrombosis into the MCA and ACA was obtained from the intraoperative angiography during hybrid operation. The information about arterial and venous phase angio CT was implemented into the text of the case description “The ultrasound examination and angio-CT scan (arterial and venous phase) of the head revealed a left-sided occlusion of arteries: common carotid artery (CCA), external carotid artery (ECA), and internal carotid artery (ICA) to the cavernous section (with an extended thrombus in the internal carotid artery above the embolism) (Figures 1, 2). At the moment of performing the angio-CT after the patient’s admission to hospital, preserved flow in the middle cerebral artery (MCA) and anterior cerebral artery (ACA) on the left side was confirmed (Figure 3).”

Comment 4
What was the authors thought process behind selecting the combined surgical+ endovascular treatment as opposed to a purely endovascular modality that is arguably a more accepted practice?

Answer:
A decision regarding combined interventional treatment involving surgical and endovascular therapy was based on the ultrasound examination results showing. According to the experience of the vascular surgeons, in the cases of big size embolism it is difficult to remove this completely by the means of endovascular methods. The hyperechogenic structure of the thrombus could be also related to the problems with the compression of the lesion if there is the need of the stent implantation. In the ultrasound duplex Doppler examination, the material occluding common carotid artery was hyperechogenic with thrombus extension into internal carotid artery, which suggested the presence of fibrous embolic material migration into the common carotid artery, occlusion of the internal carotid artery, and propagation of the thrombosis into distal part of the carotid artery. The movement of the embolism in the common carotid artery was visible during the ultrasound examination with distal CCA bulb occlusion and no signs of dissection or aneurysm presence. The decision to select a combination revascularisation treatment was based on the belief that the effectiveness of thrombolytic treatment in the case of “old” fibrous embolic lesions is limited and that their size significantly limits the possibility of complete embolism removal. In the hospital both the endovascular and surgical methods are available 24 hrs/7d but in all the cases the optimal method of revascularisation is evaluated (individual assessment and qualification of the each
admitted patient). On the other hand, some reports describe the positive effect of thrombectomy and surgical embolectomy in patients previously not subjected to thrombolytic therapy or in the case of its inefficiency.

The informations about qualification process in case description as well as introduced into the discussion.

Comment 5
How did they know that the lesion was " old fibrous embolic lesions.."? was this a retrospective conclusion by the authors after obtaining the specimen? Otherwise how did they know it would be fibrous and not amenable to endovascular treatment alone? are there any radiological features?

Answer:
No, this was the prospective evaluation. The movement of the embolism in the common carotid artery was visible during the ultrasound examination with distal CCA bulb occlusion and no signs of dissection or aneurysm presence were observed. In the ultrasound duplex Doppler examination, the material occluding common carotid artery was hyperechogenic which suggested the presence of fibrous embolic material migration into the common carotid artery, occlusion of the internal carotid artery, and propagation of the thrombosis into distal part of the carotid artery. The vascular surgeons and vascular specialist working in the ultrasound lab see many patients with peripheral embolism – the evaluation and diagnosis of the type of the occlusion at the level of CCA was based on their experience (and this turned out very usefull in this case).

Comment 6
Page 2: the words "newly shaping ischemic focus" and : disseminated brain injury of vascular origin" are clumsy and not widely accepted terms, please rephrase.

Answer: The sentence was rephrased “The Computed Tomography (CT) of the head revealed an acute ischaemic focus in the left hemisphere and white matter lesions, a surrogate for cerebral small-vessel disease.”

Comment 7
Do the authors have a picture of the embolic lesion removed with the arteriotomy?
Answear:
Unfortunately no.

Comment 8.
On page 3 line 6: the authors state that the endovascular window for stroke is 8-12 hours, please state the relevant references if so. I believe that the current guidelines advocate a more conservative time window of 6-8 hours.

Answear:
We do agree with the guidelines but there are also some studies and reports performed outside this time window. We try to follow the guidelines of course. In the text we wrote the sentence: “Endovascular methods may be implemented in the extended therapeutic window, i.e. from 8 to 12 hours from the onset of the stroke, although there is no doubt that, when applied within a short time from the onset of the disease, it is linked to more favourable prognosis.” that confirms the fact that more favourable prognosis concerns the therapies started immediately after the symptoms onset (reference numbers in the text after this sentence).

Comment 9
Why did the authors only do the repeat ultrasound and CT/CTA of the brain on day 7, is not the accepted practice to perform a repeat scan at 24hrs? is there a rationale for this to be done only at day 7? moreover even without any treatment there is a chance the lesion may have already recanalized on its own by day 7.

Answear: Authors mistake in the text of the previous version of the article. Of course the control angio Ct study was done on the 1st day after intervention. This information is corrected in the text and case description.
“Follow-up ultrasound and angio-CT of the head (1st day following the intervention) revealed proper blood flow in the arteries subjected to intervention, but a CT scan of the head revealed a marked ischemic focus (Figure 6).”

Comments 10
Multiple grammatical mistakes in the manuscript, the paper should be revised by a native english speaker.

Answear: the article text was revised and corrected.

Sincerely
Anetta Lasek–Bal
author for the correspondence