

Author's Revision Letter

The authors are grateful for the insightful and valuable comments the reviewers have made to our paper "Segmental artery injury during transforaminal percutaneous endoscopic lumbar discectomy: Two cases report with literature review".

We feel confident that your comments would contribute in raising the overall academic standards and clinical significance of this work. Each comment made by the reviewers was thoroughly discussed with co-authors. We went through each single comment with great scrutiny and made sure that we made the appropriate corrections to the manuscript as suggested by the reviewers.

Reviewer: 1

Thanks for sharing such meaningful cases. Suggestions: 1. Please re-upload the original figures, such as Figure 2. (A) and (B); 2. Please supplement the laboratory results of these two patients, such as blood routine and coagulation function results; 3. There are some misuses, such as the second “at” in “Case 1: He was transferred to the emergency department at our hospital at 17 hours after surgery.” Please recheck the whole manuscript carefully.

Response:

1. We uploaded the original figure.

2. We added laboratory results.

Laboratory examinations

Case 1: When the patient arrived at the emergency room, laboratory investigations revealed low levels of hemoglobin (Hb, 11.9 g/dl, normal range: 14.0~18.0) with low levels of hematocrit (Hct, 35.0 %, normal range: 42.0~52.0). White blood cell count was $10.65 \times 10^9/L$ (normal range: $4.0 \sim 10.0 \times 10^9$) and platelet count was $170 \times 10^9/L$ (normal range: $150 \sim 450 \times 10^9$). At 2 hours after arrival, follow-up laboratory investigations showed a rapidly decreasing trend to Hb 10.0 g/dl and Hct 29.2%.

Coagulation function test: Prothrombin time (PT): 10.3 seconds (normal range: 9.7~13.3); PT%: 106.1% (normal range: 77~120); international normalized ratio: 0.97 (normal range: 0.88~1.20); activated partial thromboplastin time: 24.9 seconds (normal range: 23.1~37.3). These results were all within normal ranges.

Case 2: When the patient arrived at the emergency room, laboratory investigations revealed low levels of Hb (9.4 g/dl, normal range: 12.0~16.0) with low levels of Hct (27.5%, normal range: 37.0~47.0). White blood cell count was $15.52 \times 10^9/L$ (normal range: $4.0 \sim 10.0 \times 10^9$) and platelet count was $170 \times 10^9/L$ (normal range: $150 \sim 450 \times 10^9$).

Coagulation function test: Prothrombin time (PT) : 10.7 seconds (normal range: 9.7~13.3); PT%: 93.4% (normal range: 77~120); international normalized ratio: 1.03 (normal range: 0.88~1.20); activated partial thromboplastin time: 20.4 seconds

(normal range: 23.1~37.3). These results were all within normal ranges.

3. We deleted the second “at” for the corresponding sentence. In addition, the whole manuscript was thoroughly checked.

Reviewer: 2

This manuscript reported two cases of segmental artery injury during transforaminal percutaneous endoscopic lumbar discectomy. It was indeed rare cases and even rarer for those treated by emergency transarterial embolization. It is a serious and urgent complication surgeons should pay much attention to. It is a good case report! However, in the discussion part, the main “take-away” lessons are lacking. It is of great significance to discuss how to avoid the artery injury, and once injured, how to deal with it. And what’s the indication for transarterial embolization, as some artery injuries can be treated conservatively. And for transarterial embolization, is there any risks or complications? For example, it is generally acknowledged that the segmental artery located at the cephalic part of the foramen. In order to avoid artery injury, the work cannula must enter the spinal canal though the caudal part of the foramen. And in my clinical practice, if severe bleeding happens during the endoscopic surgery, I will apply compression hemostasis by gelatin sponge until obvious bleeding stops. These clinical knowledges are recommended to add in the discussion part. Minor flaw exists. Line 20, NPH should have a full form here.

Response: We added the following to the discussion.

During guide wire insertion, before reaching the disc, place the guide tip behind the posterior vertebral line to avoid damage to the segmental artery terminal branch. In the extraforaminal area, the arterial branches are complex and care must be taken because vascular damage may occur during exploration.[7] If blood vessel damage is found, hemostasis can be attempted by electrocautery or compressing a gelatin sponge. If bleeding persists even after trying the above method, an artery injury

is suspected, and transarterial embolization can be performed as in our case. Complications of transarterial embolization include contrast reaction, vascular injury, and coil migration, but the incidence is known to be low.[11]

11 Bauer JR, Ray CE. Transcatheter arterial embolization in the trauma patient: a review. *Semin Intervent Radiol* 2004; 21: 11-22 [PMID: 21331105 DOI: 10.1055/s-2004-831401]

We changed the HNP to herniation of nucleus pulposus (full term).