Concerning the Article "Transhumeral Portal for Arthroscopic Glenohumeral Resurfacing Procedures: A Cadaveric Study of the Safety and Accuracy"

To the Editor:

We sincerely applaud the work done by Bartosiak et al.[1] in which the safety and accuracy of transhumeral portal was evaluated. This technique allows access to the surface of the glenohumeral joint and avoids transection of the subscapularis muscle or glenohumeral dislocation. It also reduces the risk of brachial plexus injury.

A potential complication in the positioning of the arthroscopic portals is injury to neurovascular structures.[2,3] We conducted a study in 13 shoulders to evaluate safe areas for arthroscopic portal placement[4]; 2.5-cm diameter punch dissections were done with the portal as the center point. This technique allows a description of the in situ relationship between the portal and the circumferential structures, as well as the risk of injury, without distorting the anatomy. Our results match those reported in this study regarding the subcutaneous location of veins and branches of the axillary nerve[1]; however, the authors fail to mention the potential intra-articular bleeding secondary to a transhumeral approach when performed in patients. This is relevant to the complication it may cause in visibility when performing the arthroscopic procedure.

Similar studies with a larger sample number are needed, evaluating previous pathologies, as well as age and gender in the specimens studied. It is important to document the existence of in situ neurovascular structures that are vulnerable to portal manipulation. It is also essential to evaluate the risk of fracture or complications after drilling in the humeral head.

It is important to distinguish the approach as useful and innovative to access the surface of the glenohumeral joint or that it provides excellent accuracy to reach the center-center of the humeral and glenoid articular surfaces, which is essential to locate and repair cartilage lesions.

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Authors' Reply

We appreciate the thoughtful comments. You are correct that bleeding from an intraosseous source from the transhumeral portal can affect visibility. Inserting a transhumeral protective sheath into the portal as well as increasing the pump pressure may reduce this problem.

With regards to the risk of proximal humeral fracture, previous case series have reported drilling larger, up to 1 cm diameter, transhumeral tunnels up to the cortex (not through and through) for avascular necrosis without complication or fracture. You are correct that the size of a complete transhumeral tunnel and the risk for fracture have not been studied.

Lastly, the transhumeral point-to point guide that we use is very accurate at locating and hitting a specific site. However, I was limited in arthroscopically judging the center-center on the humeral head surface with a 30° scope. Computer navigation and/or fluoroscopy may be helpful in increasing our accuracy for judging center-center and is worth studying, as you mentioned.

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