Reviewer's report

Title: In-Office Diagnostic Arthroscopy for Knee and Shoulder Intra-articular Injuries - Its Potential Impact on Cost Savings in the United States

Version: 5  Date: 25 February 2014

Reviewer: GEORGE PAPACHRISTOU

Reviewer's report:

Thank you for asking me to review the revised manuscript 'In-Office Diagnostic Arthroscopy for Knee and Shoulder Intra-articular Injuries - Its Potential Impact on Cost Savings in the United States'.

A large number of procedures both for shoulder and knee lesions as well as in other joints are carried out in USA yearly in order to achieve a clear diagnosis of deep pathology.

Magnetic resonance imaging and clinical evaluation are compared with the proposed in-office needle diagnostic arthroscopy, as far as diagnostic accuracy, cost effectiveness and safety of the procedure.

The above conservative diagnostic procedures for knee and shoulder lesions in USA represent the everyday practice. Nevertheless there are cases with a positive MRI finding, where there may not be a lesion present and consequently a surgical intervention will be followed. On the other hand there are cases with negative MRI finding, where a lesion is present and the patient attend the out-patient clinics for a period of time, while a surgical intervention it is required.

The new smaller needle arthroscope with improved optics and visualization, the VisionScope System (VSI), proposed by the present authors, enables office-based pre-operative and post-operative arthroscopic imaging and diagnostics.

Total savings to the healthcare system of USA by the proposed procedure are estimated up to $210 million ($151 million for knee + $59 million for shoulder) in the present study.

Another possible positive outcome of the proposed technique is a potential shortening of the patient’s diagnostic agony. The patient in the course of diagnosis is informed about the findings and the potential treatment and in this way, may reduce any patient anxiety concerning his situation. Consequently, fewer patients will be exposed to unnecessary surgical intervention.

The proposed diagnostic method is based on optical examination with its limitations, well stated in the submitted manuscript by the present authors. The elimination of a probe is a weak point, but on the other hand, gives better diagnostic criteria, in comparison with MRI. Exclusion of cases with acute haemarthrosis minimizes the possibility of false negative diagnosis.
The present authors have incorporated in the revised manuscript, our comments and suggestions. The submitted manuscript in the present form, possess both scientific and practical value and should be accepted for publication.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests