

## Intra-operative femoral head vascularity assessment: An innovative and simple technique (Letter 2)

Sir,

We read the article entitled: Intra-operative femoral head vascularity assessment: An innovative and simple technique, with interest.<sup>1</sup>

In reality, the intra-operative and invasive examinations only recently came into prominence for the assessment of blood supply to the femoral head following intra-capsular femoral neck fracture.

Gill *et al.*, made a 2-mm tunnel in the femoral head during the open reduction and internal fixation of the femoral neck fracture. They assessed the characteristic of bleeding from this tunnel as a predictor of avascular necrosis of the femoral head.<sup>2</sup> Watanabe *et al.*, stated that the circulation of the femoral head can be predicted by the measurement of intraosseal oxygen-tension in the proximal femur.<sup>3</sup> Cho *et al.*, examined the characteristic of bleeding from the

mortise made for the screw during the internal fixation of femoral neck fracture.<sup>4</sup> All the above diagnostic techniques can be considered as non-quantitative methods, therefore, their outcome should be evaluated with restriction.<sup>5</sup> This statement is supported by clinical studies. In the opinion of Schmidt *et al.*, the incidence of avascular necrosis of the femoral head and non-union of femoral neck nowadays is identical with the data of the 1930s.<sup>6</sup>

On these grounds, Nyarady suggested that the presence or absence of femoral head circulation alone is not enough to predict the uneventful healing of femoral neck fracture.<sup>7</sup> The quantitative assessment of blood supply to the femoral head is essential to determine the adequate surgical method (osteosynthesis vs. arthroplasty). They introduced the optic (osteoscope) into the mortise prepared for the proximal screw in the case of closed reduction and screw fixation and observed the appearance of bleeding from the bone whilst changing the internal pressure of the mortise. In accordance with the quality of bleeding, further subgroups were defined amongst patients with preserved circulation to the femoral head. The outcome of the head-preserving surgery (osteosynthesis) was dependent on the quality of bleeding detected during this examination (osteoscopy).

Therefore, I would like to challenge the following statement of the authors mentioned in the discussion: "The absolute pressures may not be of much significance in the determination of blood flow in surgical situation". I would like to encourage the authors to acquire more quantitative data about the circulation of the femoral head using their impressive method. Only the accurate analysis of femoral head circulation could help the decision-making process of surgeons and decrease the high complication rate following intracapsular femoral neck fracture.

**Andor Sebestyén, Imre Boncz<sup>1</sup>, Ferenc Tóth<sup>2</sup>**

*National Health Insurance Fund, South-Transdanubian Regional Office, Pécs, Hungary, <sup>1</sup>Institute for Health Insurance, University of Pécs, Pécs, Hungary, <sup>2</sup>CARE UK Ltd, NHS Barlborough Treatment Centre, UK*

**Address for correspondence:** Dr. Andor Sebestyén, National Health Insurance Fund South-Transdanubian Regional Office, Pécs, Hungary, Pécs H-7623, Nagy Lajos király ut 3, Hungary. E-mail: sebestyen@dravanet.hu

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