

Osawa Y, Seki T, Okura T, Takegami Y, Ishiguro N, Hasegawa Y. Long-term outcomes of curved intertrochanteric varus osteotomy combined with bone impaction grafting for non-traumatic osteonecrosis of the femoral head. *Bone Joint J.* 2021;103-B(4):665-671.

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Sir,

We very much enjoyed reading this article.¹ It gives a thorough insight into the use of the curved intertrochanteric varus osteotomy (CVO) for osteonecrosis of the femoral head (ONFH) and concludes that the outcome was favourable when carried out in conjunction with bone impaction grafting (BIG).

The authors describe and analyze the procedure comprehensively. Nonetheless, we have some concerns about patient selection, radiological evaluation, and follow-up which we would like the authors to address.

First, Figure 1 is said to describe “the classification of the localization of the necrotic lesion according to the Japanese Investigation Committee of the Ministry of Health, Labour and Welfare” and refers to reference 13. However, this detailed classification and figures of Type A, B, C1, and C2 do not appear in the aforesaid article.² Sugano et al³ revised the criteria for idiopathic osteonecrosis and described the weight-bearing area as the area lateral to the mid-vertical line of the line through the edge of the acetabulum and most inferior point of the teardrop. The current article misrepresents this classification in Figure 1: the lines in Figure 1 are incorrect in their depiction of the “weight-bearing area” according to the classification system that the authors quote. Similarly, Figure 3 illustrates “Measurement for the ratio of the intact articular surface of the femoral head to the weight-bearing area of the acetabulum (A to B weight-bearing surface of acetabulum, and C to D intact area by osteotomy)” along with “Intact ratio (%) = A-B / C-D x 100”, and is calculated by the method of Sugioka et al.⁴ The calculation of A-B in the article (as depicted in Figure 3) differs from that in the reference article. The correct drawings based on our understanding of Sugioka’s article are depicted in Figure (i) and (ii) below.

Second, the patient selection and patient follow-up need further clarification. Under the subheading “Measurements”, it is stated that “The medical records of patients who underwent THA after CVO were reviewed,” but there is a lack of clarity about the data collection for the rest of the patients. Also, at final follow-up, it is noted that 33/37 patients in the BIG group responded compared with 32/44 patients in the CVO group. Further, the patients who underwent conversion to THA were excluded from the final follow-up results (seven in the BIG group and six in the CVO group) (Table III). We would like to enquire about any attrition bias in the study, i.e. the number of patients who underwent

preoperative assessment and the number at the time of final follow-up assessment. This would allow us to identify attrition at different stages of the study.

Third, the article states that “radiological failure was observed in 12 patients in the BIG group and 13 in the CVO group”. These values are acting as confounders as it is unclear whether or not these patients included those converted to THA as that would vastly alter the outcome score of the procedures.

This study undoubtedly adds to the existing literature but an explanation of the points discussed above would enhance the overall message of the article.

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1. **Osawa Y, Seki T, Okura T, Takegami Y, Ishiguro N, Hasegawa Y.** Long-term outcomes of curved intertrochanteric varus osteotomy combined with bone impaction grafting for non-traumatic osteonecrosis of the femoral head. *Bone Joint J.* 2021;103-B(4):665-671.
2. **Sugano N, Kubo T, Takaoka K, et al.** Diagnostic criteria for non-traumatic osteonecrosis of the femoral head. A multicentre study. *J Bone Joint Surg Br.* 1999;81-B(4):590–595.
3. **Sugano N, Atsumi T, Ohzono K, Kubo T, Hotokebuchi T, Takaoka K.** The 2001 revised criteria for diagnosis, classification, and staging of idiopathic osteonecrosis of the femoral head. *J Orthop Sci.* 2002;7(5):601-605.
4. **Sugioka Y, Hotokebuchi T, Tsutsui H.** Transtrochanteric anterior rotational osteotomy for idiopathic and steroid-induced necrosis of the femoral head. Indications and long-term results. *Clin Orthop Relat Res.* 1992;277:111–120.

Conflict of interest: None

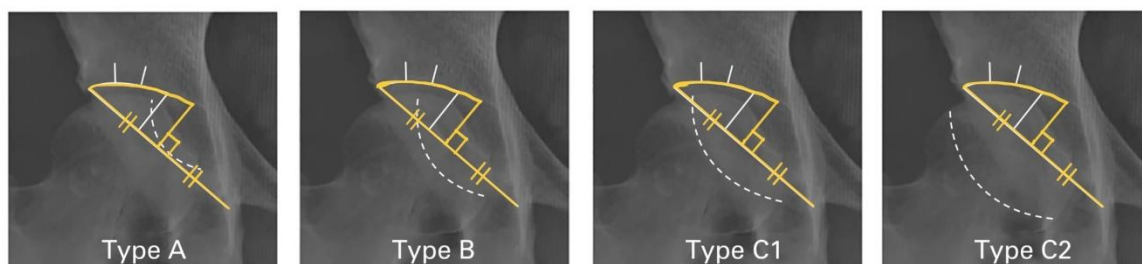


Figure (i)

Figure i. Yellow line depicting the possible corrections (as per our understanding) in Figure 1, “The classification of the localization of the necrotic lesion according to the Japanese Investigation Committee of the Ministry of Health, Labour and Welfare.”

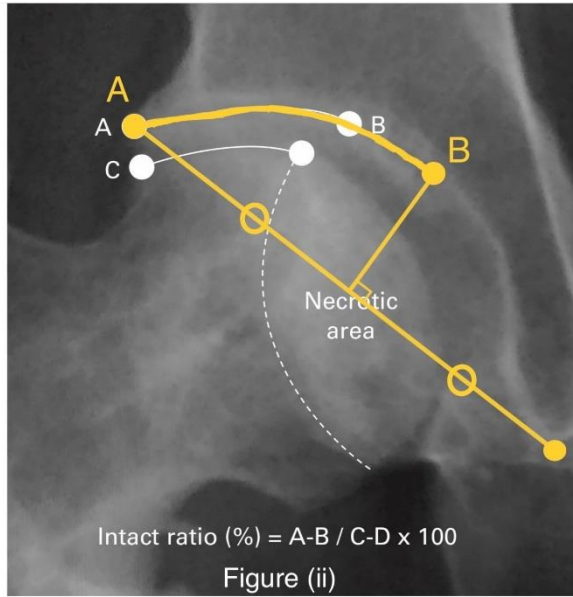


Figure ii. Yellow line depicting the possible corrections (as per our understanding) in Figure 3, “Measurement for the ratio of the intact articular surface of the femoral head to the weight-bearing area of the acetabulum (A to B weight-bearing surface of acetabulum, and C to D intact area by osteotomy)”.

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Editor’s note: Corrections have since been made to Figures 1 and 3 and Reference 13 in the online version of this April 2021 paper and a corrigenda is available in the September 2021 issue of the Journal which details the corrections made.

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