Comment on Sen et al.: Posterior wall reconstruction using iliac crest strut graft in severely comminuted posterior acetabular wall fracture

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Dear Sir,

We read with interest the article entitled "Posterior wall reconstruction using iliac crest strut graft in severely comminuted posterior acetabular wall fracture" [6]. In the study, the authors used iliac crest strut graft for reconstruction of the comminuted posterior acetabular wall fracture. A series of eight patients were evaluated clinically by Merle d'Aubigne and Postel score and radiologically by Matta score at their final follow-up. The outcome after a mean follow-up of 3.34 years (minimum two years and maximum five years) showed a good-to-excellent result in seven patients (87.5%) clinically and in five patients (62.5%) radiologically [6].

We appreciate the described technique using iliac crest strut graft for reconstruction of the comminuted posterior acetabular wall fracture, and also the medium-term clinical and radiological results of this technique are satisfactory. However, in their discussion, the authors concluded "Iliac crest strut graft can be better compared to a single fragment of posterior acetabulum wall which has lost its soft tissue attachment"; we have doubts about this conclusion.

There is consensus that good prognosis is clearly related to anatomical reduction and stable fixation of posterior wall fractures. Only 30% of posterior-wall acetabular fractures involve a single large fragment. The majority are multifragmentary or have areas of impaction, where open reduction is often necessary with elevation of the depressed articular fragments [1]. Whether the fragments have soft-tissue attachments or

not was rarely mentioned in published reports. In our experience, although soft-tissue stripping was done extremely carefully intra-operatively, we often found fragments became free after elevation and reduction in severely comminuted posterior acetabular wall fractures. This has also been mentioned by Giannoudis et al. in their report [3]. Using primary severely comminuted fragments, which may be without soft tissue attachment, to reconstruct the posterior wall produced good results for different authors. The following patients were all evaluated clinically by modified Merle d'Aubigne and Postel score and radiologically by Matta score at their final follow-up. Im et al. retrospectively examined 15 patients with a single fragmented or moderately comminuted posterior acetabular wall fracture using screws alone, whereby 14 patients (94%) had a good-to-excellent result clinically after a follow-up period of more than two years [4]. Ebraheim et al. retrospectively studied 32 comminuted posterior acetabular wall fractures combining a spring plate and reconstruction plate to reconstruct the posterior wall; the average follow-up was 43 months (range 24–70 months), and clinical evaluation gave a good-to-excellent result in 24 patients (76%) and radiologically in 23 patients (73%) [2]. Recently, Giannoudis et al. reported a two-level reconstruction technique using subchondral miniscrews for the stabilisation of comminuted posterior wall marginal acetabular fragments before applying lag screws and a buttress plate to the main overlying posterior fragment. The clinical outcome was graded as a good-to-excellent result in 27 patients (93%), and radiological outcome was graded as a good-to-excellent result in 25 patients (86%) at a mean follow-up of 35 months (range 24–90) [3]. No complication in the form of non-union, loss of fixation and absorption of fragments was noticed. As the Spearman

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correlation between the original and modified Merle d'Aubigné-Postel Score was $R=0.89$, it is equivalent to using the two grading systems clinically [5]. From these data, we therefore favour using primary severely comminuted fragments to generate better results. Whether the iliac crest strut graft is better than a single fragment without soft-tissue attachment or not, requires further study.

Furthermore in our opinion, to ensure the blood supply of the bone graft, using muscle pedicle bone graft is a reliable and easy technique in the clinical setting. However, in the study of Sen et al., the authors did not mention whether the iliac crest strut graft had a muscle pedicle or not, but Fig. 3b in that article shows a free iliac crest strut graft. In conclusion, only with muscle pedicle iliac crest strut graft application in this study, can we conclude that it is better than a single fragment of posterior acetabulum wall which has lost its soft tissue attachment.

The word “definitive” in the last paragraph, it should be “definitive”.

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