



# Now, we all know about the Osborne-Cotterill lesions, but we still don't know how to treat them

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In 1966, Osborne and Cotterill [1] described a posterior capitellum defect associated with recurrent elbow instability. The eponymous term “Osborne-Cotterill lesion” was later coined by Jeon et al. [2] in 2008). Since then, it has been used to describe capitellar bony defects or loose fragments detached from the posterolateral margin of the capitellum associated with posterolateral rotatory instability of the elbow [3-6]. Identifying this bony lesion on simple radiographs helps the surgeon recognize the associated posterolateral rotatory instability, which is mainly caused by injury to soft tissue such as the lateral ulnar collateral ligament (LUCL). However, the optimal treatment of Osborne-Cotterill lesions has not been established. According to previous reports on the surgical treatment of this injury, reconstruction of the LUCL was the most common approach, but how the bony lesion was addressed varied, including bony fragment removal [3], bone graft [7], osteochondral autograft, osteochondral allograft transfer [8] or no treatment [3,9].

Thus, I read with great interest the recent paper entitled “Prosthetic resurfacing of engaging posterior capitellar defects in recurrent posterolateral rotatory (PLRI) of the elbow,” by Rotman et al. [10]. The authors reported five patients with PLRI and associated Osborne-Cotterill lesions that were surgically treated with repair/reconstruction of the lateral collateral ligament and reconstruction of the capitellar defect with a metal prosthesis. The implant was originally designed for metatarsal head resurfacing (HemiCAP Toe Classic, Arthrosurface), and so this was an off-la-

bel use in the elbow joint, as acknowledged by the authors. Mid-term follow-up (median, 4.5 years postoperatively; range, 1–6 years) showed excellent results with no instability, prosthesis loosening or reoperation, except for mild arthritis in one patient. This study has several strengths. Given that LUCL reconstruction without addressing the bony lesion can cause recurrent instability [2], resurfacing of the engaging posterior capitellar defect shown in this study can be a useful option as a concomitant procedure in LUCL reconstruction. This study also reminds the treating surgeons of the importance of Osborne-Cotterill lesions in elbow instability. Off-label use of a metatarsal prosthesis is a limitation of this study, which may not be allowed elsewhere. Metatarsal resurfacing prostheses also may not be available or familiar to all elbow surgeons.

Future studies related to Osborne-Cotterill lesions are needed. First, a well-organized randomized clinical trial comparing ligament reconstruction with or without addressing bony lesions should be conducted to establish the indications for the combined bony procedure. Given the relative rarity of this lesion, a multicenter collaboration will be necessary. We should also address the issue of how the size of bony defects may impact treatment. As Osborne and Cotterill [1] first correlated capitellar or radial head lesions to bone loss in the humeral head (Hill-Sachs lesion) or anterior aspect of the glenoid with recurrent shoulder instability, we should measure the amount of capitellar bone loss with three-dimensional computed tomography scans, like gle-

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noid bone loss measurement is conducted in the shoulder. Based on this measurement, we can obtain clearer indications for when to use a ligament procedure alone or a combined bony procedure in individual patients. Such studies results will help surgeons establish the optimal treatment strategy for Osborne-Cotterill lesions, with the current study acting as the precursor of advancements in treatment.

## NOTES

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Conceptualization: TKL. Investigation: JHL. Supervision: TKL. Writing – original draft: TKL. Writing – review & editing: TKL.

### Conflict of interest

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## REFERENCES

1. Osborne G, Cotterill P. Recurrent dislocation of the elbow. *J Bone Joint Surg Br* 1966;48:340–6.
2. Jeon IH, Micic ID, Yamamoto N, Morrey BF. Osborne-Cotterill lesion: an osseous defect of the capitellum associated with instability of the elbow. *AJR Am J Roentgenol* 2008;191:727–9.
3. Jeon IH, Min WK, Micic ID, Cho HS, Kim PT. Surgical treatment and clinical implication for posterolateral rotatory instability of the elbow: Osborne-Cotterill lesion of the elbow. *J Trauma* 2011;71:E45–9.
4. Schwarzkopf E, Südkamp N, Maier D. Engaging Osborne-Cotterill lesion with Mason 4 radial head elbow dislocation fracture: a case report of biomechanical importance and operative treatment. *J Shoulder Elbow Surg* 2018;27:e75–8.
5. Vargas DG, Woodcock S, Porto GF, Gonzalez JC. Osborne-Cotterill lesion a forgotten injury: review article and case report. *Clin Shoulder Elb* 2020;23:27–30.
6. Yano K, Kaneshiro Y, Sakanaka H. Acute elbow trauma similar to Osborne-Cotterill lesion, capitellar impaction fracture associated with posterolateral rotatory instability: a case report and literature review. *J Orthop Sci* 2021;26:1152–5.
7. Shukla DR, O'Driscoll SW. Atypical etiology of lateral collateral ligament disruption and instability. *J Orthop Trauma* 2013;27:e144–6.
8. Lee SJ, Bedford BB, Kim AH, Rahman OF, Zbeda RM. Elbow osteochondral allograft transplantation and lateral ulnar collateral ligament repair with internal brace: a case report. *JBJS Case Connect* 2022;12:e2100615.
9. Patiño JM, Torres Moirano JM. Engaging posterior capitellum fracture and elbow posterolateral rotatory instability: is it always necessary to treat the bone defect. *Case Rep Orthop* 2020;2020:3260106.
10. Rotman D, Lievano JR, O'Driscoll SW. Prosthetic resurfacing of engaging posterior capitellar defects in recurrent posterolateral rotatory instability of the elbow. *Clin Shoulder Elb* 2023;26:287-95.