

Indomethacin not effective as prophylaxis against heterotopic ossifications following distal biceps tendon repair

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Background

Heterotopic ossifications can be a symptomatic complication following distal biceps repair and are seen in 20-25% of the patients.. A study in 2015 resulted in a change of the postoperative protocol in Amphia hospital to standardize the prescription of Indomethacin following repair of the distal biceps tendon.¹

Aim/hypothesis

The aim of this study was to assess the efficacy of Indomethacin, a non-selective non-steroidal anti-inflammatory drug (NSAID), in preventing heterotopic ossification (HO) after distal biceps repair.

Methods

- Single center retrospective study: 78 patients between 2008 and 2019
- Postoperative radiographs after 8 weeks were reviewed blindly by 5 assessors.
- If a heterotopic ossification was present, it was scored with a classification scale for size: the Ilahi-Gabel Classification and a classification scale for density: the Gartner and Heyer classification.
- A Chi-square test was used to determine the difference in HO between the patient who were treated with Indomethacin and who were not.

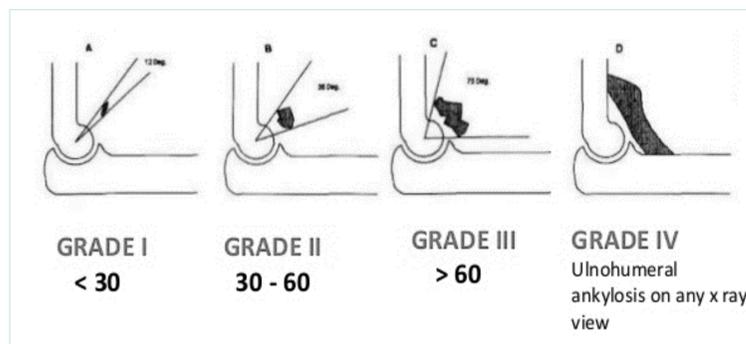
Results

- 26 (33%) Indomethacin postoperatively (21 days, 75mg per day).
- 28% heterotopic ossifications → 5 treated with Indomethacin, 14 patients were not treated with Indomethacin ($p = 0.48$).

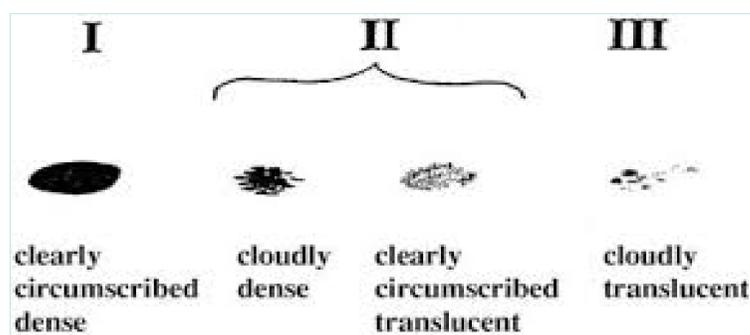
Demographic	Indomethacine received (n = 26)	Indomethacine not received (n = 52)	P-value
Gender			
- Female	1	5	-
- Male	25	47	-
Age, ±SD, y	49.3± 7.6	48.5± 8.3	p = 0.3
Time injury to surgery, in weeks			
- median (range)	32.5 (3-174)	18 (1-389)	p = 0.7
Tear characteristics			
- Partial tear	13	24	-
- Complete tear	13	28	-
Reason rupture: trauma	19	33	-
Heterotopic ossifications	5	15	p = 0.46
Ilahi-Gabel classification (size)			
- median (range)	1 (1-2)	1 (1-2)	p = 0.23
Gartner & Heyer classification (density)			
- median (range)	2 (1-3)	3 (1-3)	p = 0.13*

SD, standard deviation

Ilahi-Gabel Classification: size



Gartner and Heyer Classification: density



Prolonged time injury – surgery

Patients that developed heterotopic ossifications had a significantly increased time from injury to surgery ($p < 0.01$). This is consistent with literature that patients with a prolonged time from injury to surgery had more complications.²

Characteristics	Heterotopic ossifications (n = 19)	No heterotopic ossifications (n = 59)	P – value
Time injury to surgery, in weeks			
- median (range)	71.0 (1-389)	17.0 (1-203)	p = 0.01*
Tear characteristics			
- Partial tear	13	28	-
- Complete tear	6	31	-

* significance $p < 0.05$

Conclusion

Indomethacin did not show to be an effective prophylaxis for the prevention of heterotopic ossifications following single incision distal biceps repair.

Clinical implication

A prospective clinical trial, in a single and double incision technique, would be helpful to analyze the effectiveness of Indomethacin as a prophylaxis. Early surgical intervention might be protective against complications, such as heterotopic ossifications. Based on this study it is *not* advised to prescribe Indomethacin.

¹ Costopoulos CL, Abboud JA, Ramsey ML, Getz CL, Sholder DS, Taras JP, et al. The use of indomethacin in the prevention of postoperative radioulnar synostosis after distal biceps repair. J Shoulder Elbow Surg. 2017;26(2):295-8

² Anakwenze OA, Baldwin K, Abboud JA. Distal biceps tendon repair: an analysis of timing of surgery on outcomes. J Athl Train. 2013;48(1):9-11.