

# Should clinicians integrate the findings of *The Lancet's* 2018 placebo-controlled subacromial decompression trial into clinical practice?

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Earlier this year, Beard *et al*<sup>1</sup> published the outcomes of a multicentre, placebo-controlled randomised surgical trial in *The Lancet*, in which they concluded that arthroscopic subacromial decompression has little or no benefits over placebo surgery for the treatment of subacromial shoulder pain. The article instigated heated debates among orthopaedic surgeons and sports physicians, including a critical response in the same journal by Schreurs and van der Pas,<sup>2</sup> and a full editorial in the *British Journal of Sports Medicine* by Littlewood *et al*.<sup>3</sup> While we agree with many of the points raised, in both the original publication and subsequent correspondence, we are concerned about overinterpretation of these texts to invalidate or discredit subacromial decompression as a primary or adjuvant procedure, based on short-term data and regardless of the aetiologies treated.

Subacromial decompression comprises three main steps, namely 'removal of bursa and soft tissues within the subacromial space, release of the coracoacromial ligament, and removal of the subacromial bone spur'.<sup>1</sup> The last step, also termed 'acromioplasty', is believed to be the most effective, which is probably why it became a *pars pro toto* synonym of the entire procedure. In agreement with Beard *et al*<sup>1</sup> several randomised controlled trials proved both subacromial decompression and isolated acromioplasty ineffective as primary or adjuvant treatments for shoulder pathologies.<sup>4,5</sup> A controversy persists, however, as many surgeons believe that acromioplasty prevents impingements of the supraspinatus and infraspinatus tendons, and hence protects the rotator cuff from damage.<sup>6</sup> The enigma remains unresolved likely due to two common flaws of most studies on the topic:

1. Many patients may not benefit from the procedure, either because they do not require it or due to insufficient acromial resection. Dynamic evaluations of subacromial

impingement revealed that contact is less anterior than previously thought, and that acromioplasty significantly reduces subacromial impingement, without the need for coracoacromial ligament resection.<sup>7</sup> Moreover, in a recent study, Gerber *et al*<sup>8</sup> advocated that adjuvant acromioplasty is only necessary in shoulders with high critical shoulder angle (CSA) (preoperative CSA $\geq$ 34°), and found that insufficient acromial resection (postoperative CSA $\geq$ 35°) is associated with significantly worse abductor strength and retear rate.

2. Follow-up is limited to 2 or 3 years, which is insufficient to confirm or refute whether the procedure prevents abrasive wear and tear. Degeneration of rotator cuff tendons due to impingement against an acromial spur is a process that depends on acromial morphology and shoulder movements, and can extend over several decades.<sup>8,9</sup>

While we commend Beard *et al*<sup>1</sup> for their meticulous coordination and reporting of a nationwide study, we feel compelled to warn our peers from generalising their conclusions, potentially depriving some patients from a procedure that may be safe and effective for them. It is important to consider the diversity or vagueness of the authors' inclusion criteria (subacromial pain for at least 3 months), and the lack of consistent radiographic protocol to determine the underlying pathologies (rotator cuff tears identified with MRI, ultrasound or X-rays). It is also worth noting that their clinical assessments did not distinguish between traumatic and chronic pathologies, nor did the authors report the intervals from onset of symptoms to initiation of treatments. Furthermore, as 24% of the participating surgeons had <5 years of experience, and 32% performed <20 procedures in the previous year, it is possible that a considerable proportion of patients operated either did not require acromioplasty or had

insufficient resection of their acromial spurs, neither of which could be verified without preoperative and postoperative radiographic measurements of CSA or acromial index (AI).

The true benefits of subacromial decompression or acromioplasty are yet to be proven by long-term studies that account for changes in the CSA or AI, which could help us improve patient selection and operative techniques.

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