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## Peer Review File

Article information: <http://dx.doi.org/10.21037/abs-21-30>

*Comment 1:* Page 3, line 22: Please insert references for the numerous studies after ....five decades (Ref).

*Reply 1:* Added references

*Comment 2:* Page 4, line 2: Please insert references after .....unresolved (Ref.)

*Reply 2:* Inserted references

*Comment 3:* Page 4, Line 13: Please change “lateral side position” to “lateral position” –

*Reply 3:* ok, changed according to comment.

*Comment 4:* Page 4, Lines 17-19: Comment: This is very easy to assess preoperative using color Doppler ultrasonography, and any patient with a risk of damaged TD-vessels can be identified prior to surgery and booked for a different type of surgery e.g. a TDAP with retrograde bloodsupply from the lumbar vessels.

Preoperative CDU enables much faster surgery as the flap can be raised from the lumbar insertion towards the vessel pedicle right away, anyway, just different approaches. –

*Reply 4:* Agree, although dependent on availability and the surgeons' routine in using a CDU (which today, probably isn't an issue and we can all agree, that a faster procedure is preferable. A very good point). It is also a safety precaution as the dissection may be difficult in patients with much fibrotic tissue surrounding the vascular pedicle.

*Changes in text:* “Some surgeons advocate the pre-operative use of color-doppler ultrasonography, which may be a very useful tool to detect vascular anomalies and plan an alternative approach.” (p4 L19-22) &

“Some surgeons prefer to initiate the dissection from the lumbar origin of the muscle and proceed towards the axilla, which may be a time-sparing option, if the thoracodorsal vessels have been identified as functional preoperatively.” (p5 L5-8)

*Comment 5:* Page 4, line 22: Comment: depends on the surgeons preferences,

*Reply 5:* Agree. We've added that part,

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*Changes in text:* “may be ligated, depending on the surgeon’s preferences, in an attempt to avoid jumping breast syndrome.” (P5 L1-2)

*Comment 6:* Page 5, lines 2-3: Comment: The humeral insertion does not need to be detached. Leaving it attached enables reconstructions that are just as cosmetic pleasing. –

*Reply 6:* changed to “may be detached” (P5 L6)

*Comment 7:* Page 5, line 10: Suggestion: “the TAP flap”, should probably be called “TDAP” as this is more correct. –

*Reply 7:* corrected

*Comment 8:* Page 5, line 11: Please change “the fast” to “the fascia” –

*Reply 8:* of course

*Comment 9:* Page 6, lines 1-20: Comment:” I noticed in your description of surgical technique, that you prefer to detach the insertion from the humerus. Question: Is the surgical technique described in each of the described papers, and if so, is there any difference in outcomes reflecting detaching the insertion or not? -

If the insertion is not detached one would intuitively expect less morbidity. (Furthermore it is faster and easier to perform the reconstructive procedure without the detachment and possible to get the same satisfying cosmetic results, ref. 18. This also means that the difference between groups in the study by Rindom may have been larger and more significant if the insertion had been detached as they showed in their retrospective study in a similar patient group).

*Reply 9:* This is an interesting topic but would probably require an independent paper to discuss in detail. We do not entirely agree, that leaving the humeral insertion would intuitively lead to less *functional* morbidity as the muscle is transposed to a new position and therefore, the direction of traction from the humeral insertion is unnatural, which in theory may interfere with the shoulder joint. However, this is not something we have investigated in our own setting nor in detail in the literature.

Of the included studies a trend towards humeral detachment is seen, for studies that describe the topic (which is actually an important point as precise reporting of aspects of the surgical technique, which may provide variability, is most important in order to sufficiently being able to compare studies).

Studies *without* humeral detachment: Rindom et al. 2019

Studies *with* humeral detachment: oliveira, forthomme and sowa et al.

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Studies without description: Glassey, russel and van huizum et al.

The only observation that is systematic in this limited sample of studies describing whether the humeral insertion is detached or not, is that Rindom et al. observes a decrease in ROM (no isolated p for LD group) and the three studies with complete humeral detachment does not observe any change in ROM (although forthomme et al doesn't directly report ROM but states that "active mobility showed maximal score throughout the whole follow-up").

*Comment 10:* Page 7, Lines3-5: Agree

*Reply 10:*

*Comment 11:* Page 7, Lines 16-18: Comment: Yes after a followup of 12 months with physiotherapy and training. Would be interesting if the same was the case after say 36 months just as the studies below?

*Reply 11:* Agree. This is a very interesting topic; the actual long-term effect of LD transfer. Additionally, which possible effects it may have on posture or core strength.

*Comment 12:* Page 9, Lines 1-5: Comment: It seems the shoulder weakening get more severe over time?

*Reply 12:* This is difficult to determine based on the included studies. We report that the immediate shoulder weakening (approx. 3 months post-op) may improve the following months due to agonistic strengthening. We agree that the study by Sowa et al. indicates that some additional weakening may be seen over a longer time-course, but this must be investigated further before conclusions can be drawn (but also necessitates a very detailed level of information regarding physical activity, exercise and other possible confounders). Furthermore, measurements must be bilateral in order to have the un-operated side as control for long-term effects of ageing etc.

*Comment 13:* Page 9, Lines 16-17: Comment: "The studies by Forthomme and Rindom found a decrease in Constant score for ADL of 40% and 8% respectively", Interesting, was the time from surgery to the survey the same or was there a difference?

*Reply 14:* follow-up was 6 months (forthomme) and 12 months (rindom)

*Change in text:* added "(6 months post-op)" and "(12 months post-op)". P9 L20

*Comment 14:* Page 11, Line 6: Please explain LOS in text Length of stay

*Reply 14:* yes

*Comment 15:* Page 11, Line 15: TAP -> TDAP?

*Reply 15:* yes

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*Comment 16:* Page 12, Line10: (ref JBT 2021) -> Maybe insert doi:

<https://doi.org/10.5999/aps.2020.01410>

*Reply 16:* this was a mistake, reference inserter, my apologies

*Comment 17:* Page 12, Line 11-15: Comment: LOS does not last approximately one week, but rather 2 days. The propeller TDAP patients mobilize quicker than LD patients and the drains can be removed much earlier than the LD. Often no mesh is needed and in the rest of cases a vicryl mesh is used. The drains is in most cases removed after 1-2 days. No drains in the back. Most patients are discharged without drains within 2 days.

Suggest that you modify this section.

*Reply 17:* Thank you for this update. Respectfully, we have not been able to identify papers reporting these numbers. The text has been updated to include the recognition of the potential for a LOS of 2 days (lower limit of the median in Gunnarsson et al.) and respecting the above-mentioned strategy for drain-handling, as the literature of our knowledge still suggests longer median drain time (despite progress in some very experienced departments). If the changes regarding drains are not satisfactory, we should consider leaving that part out.

*Change in text:* added “traditionally has been reported with a median of 7 days, although an LOS of down to two days was demonstrated, which illustrates a potential for shorter hospitalizations in standardized settings” (P12 L14-16) and “although the introduction of procedures omitting the use of a mesh or using a low-irritant mesh (i.e. a vicryl mesh) may reduce the drain output drastically, thereby allowing early drain-removal.” (P12 L19-21).

*Comment 18:* Page 12, Line 18: Change remain to remains. Have you answered the question: “Is there a price to pay?” in the conclusion, not really, so maybe you should add if you think there is a price to pay or not in the conclusion, if you are able to make a conclusion regarding this based onb your findings;)

*Reply 18:* We have sought to cover it in the conclusion and our personal belief is that minimal donor-site morbidity should always be sought. We tried to clarify the message, that one must expect a considerable loss of shoulder strength but that it is (for this patient population) not always perceived as bad as the numbers look.

*Changes in text:* “as the price to pay for an LD flap may be a considerable” (P13 L11) and “perceived by the patients” (P13 L14)