

Background

- Symptomatic osteoarthritis of the thumb (first) carpometacarpal (CMC) joint or trapeziometacarpal joint, also known as basilar thumb arthritis, is a debilitating diagnosis that affects between 5-33% of adults in their 5th and 6th decades of life with a propensity for post-menopausal women.¹⁻³
- Ligament reconstruction tendon interposition (LRTI) and suture-button suspensionplasty (SBS) are both common treatment options for trapeziometacarpal osteoarthritis.⁴⁻⁹

Objective

- The primary purpose of this systematic review is to compare the patient-reported outcomes, specifically Disabilities of the Arm, Shoulder, and Hand (DASH) and QuickDASH scores, between SBS and LRTI.
- A secondary purpose was to compare the subjective improvement, objective outcome scores, and complication rates following both procedures. The authors hypothesize that both interventions will result in similar functional outcomes, grip strength, pinch strength, and complication rates.

Methods

- The systematic review was registered with PROSPERO (CRD42020214224) and the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) guidelines were followed.
- Inclusion criteria were Level I-IV studies that looked at either LRTI or SBS as the surgical treatment and included DASH as the patient-reported outcome measure.
- Exclusion criteria were cadaveric studies, biomechanical studies and studies on post-traumatic causes of base of thumb arthritis.

Trapeziectomy and LRTI

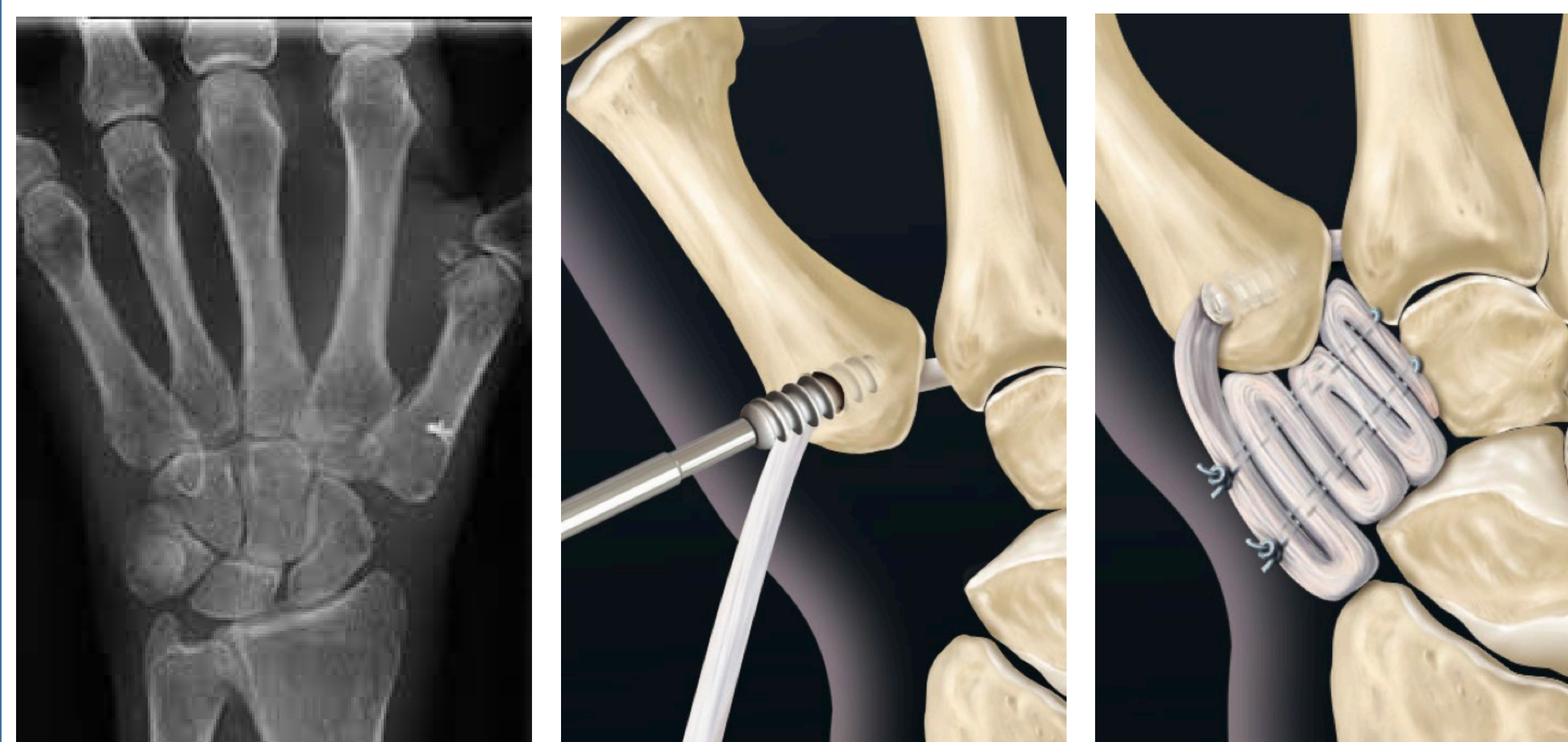


Figure 1. Left: Anteroposterior (AP) radiograph depicting hand s/p trapeziectomy and LRTI. Middle: Depiction of suture anchor placed into base of 1st metacarpal for LRTI. Right: Depiction after completion of LRTI with FCR tendon interposed.

Trapeziectomy and SBS

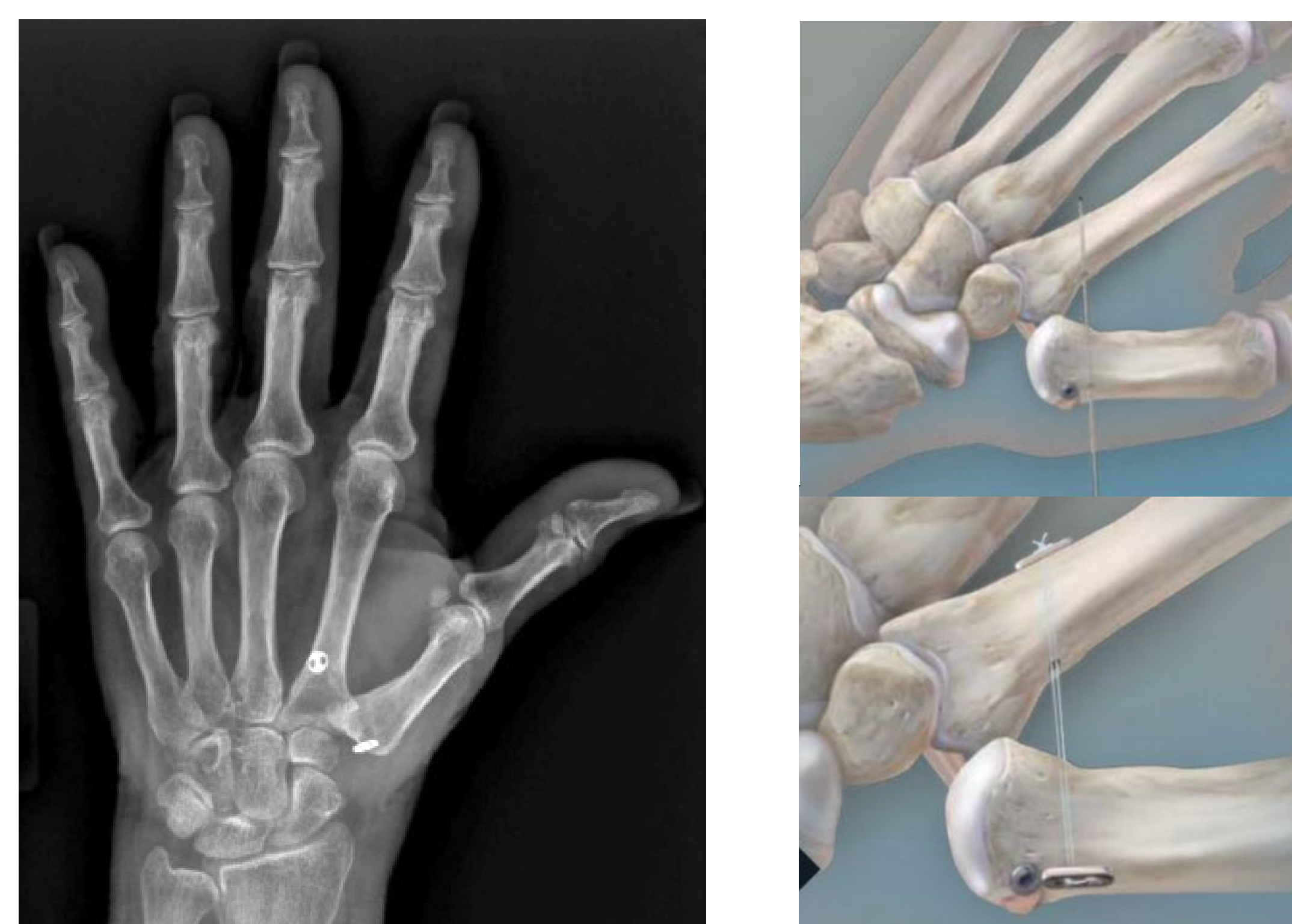


Figure 2: Left: AP radiograph depicting hand s/p trapeziectomy and SBS. Right: Animation depicting SBS.

Results

- 25 studies on LRTI, with a total of 1289 thumbs and a mean age of 61.1 years.
- 6 studies found on SBS, with 113 thumbs and a mean age of 60.9 years.

LRTI

- Pre DASH: 48.1
- Post DASH: 23.3
- 89.5% reported a MCID ($\Delta >10$)
- Grip strength: +4.7kg
- Key pinch: +0.5 kg
- Complication rate: 12.2%
- Re-operation rate: 0.5%

SBS

- Pre DASH: 46.3
- Post DASH: 19.5
- 80% reported a MCID
- Grip strength: +7.3 kg
- Key pinch: +1.2 kg
- Complication rate: 13.3%
- Re-operation rate: 1.8%

Conclusion

- Both techniques lead to improvement in patient reported outcomes with improvements in grip and key pinch strength.
- There were also similar complication rates between the two procedures.

References

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