Therapy Staff Perceptions of the Change from Incision Closure Techniques by Orthopedics in Patients With Total Knee Arthroplasty

Bristol Health

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Problem

Bristol Hospital is a community hospital with approximately 130 licensed beds in Bristol, CT with an active Total Knee Arthroplasty(TKA) program. In 2024, the TKA surgery team announced their planned change from incision closure with staples to mesh and glue** due to some surgery team members having prior successful experience with this technique however, none of the Rehab team had any experience with this product. There were many discussions in Rehab about potential concerns regarding patient care. Some topics included incisional integrity during therapy with general functional mobility, standard flexion/extension exercises, as well as integrity concerns after discharge to home where there is less supervision/assistance.

Objective

The purpose of this project was to determine if 1 year out from the change if therapy staff had any differences in their concern levels.

Method

We surveyed PT/OT staff using a 5 question 0-10 point Lickert-type rating scale regarding their concerns from the announcement 1 year prior and their concerns post implementation with 0 indicating no concerns and 10 indicating significant concerns. All 6 eligible therapists chose to participate.

**Liquiband XL mesh/glue, Medtronic, Advanced Medical Solutions Ltd

Citations

1. Choi, Keun Young, et al. "2-octyl cyanoacrylate topical adhesive as an alternative to subcuticular suture for skin closure after total knee arthroplasty: A randomized controlled trial in the same patient." The Journal of Arthroplasty, vol. 36, no. 9, Sept. 2021, pp. 3141–3147, https://doi.org/10.1016/j.arth.2021.04.033.

2. Sundaram, Kavin, et al. "Skin closure with 2-octyl cyanoacrylate and polyester mesh after primary total knee arthroplasty offers superior cosmetic outcomes and patient satisfaction compared to staples: A prospective trial." European Journal of Orthopaedic Surgery & Traumatology, vol. 30, no. 3, 5 Nov. 2019, pp. 447–453, https://doi.org/10.1007/s00590-019-02591-4.

3. Premkumar, Ajay, et al. "Wound complications are affected by different skin closure methods in primary hip and knee arthroplasty." The Journal of Arthroplasty, vol. 38, no. 6, June 2023, pp. 1160–1165, https://doi.org/10.1016/j.arth.2023.02.074.

4. Liu, Te, et al. "Comparison of the safety and efficacy of three superficial skin closure methods for multi-layer wound closure in total knee arthroplasty: A multicenter, prospective, randomized controlled trial." Arthroplasty, vol. 6, no. 1, 11 Sept. 2024, https://doi.org/10.1186/s42836-024-00271-1.

Data

Therapy Staff Perceptions of the Change from Incision Closure Technique by Orthopedics in TKR patients

1. When the change from use of staples to use of mesh and glue was introduced by Orthopedics, I had concerns for incisional integrity during therapy sessions in the immediate post op period-

   0 1 2 3 4 5 6 7 8 9 10
   None Some Significant

2. I was concerned about incisional integrity once the patient was home and more mobile with less supervision-

   0 1 2 3 4 5 6 7 8 9 10
   None Some Significant

3. I felt concern about how the incision would stay intact during knee flexion/extension exercises-

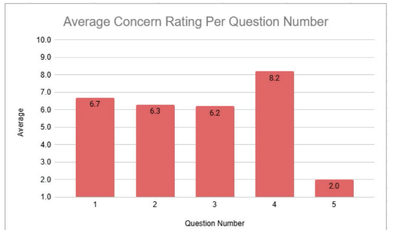
   0 1 2 3 4 5 6 7 8 9 10
   None Some Significant

4. I had concerns about incisional integrity in the situation of a fall-

   0 1 2 3 4 5 6 7 8 9 10
   None Some Significant

5. A year has passed since this closure change and I still have concerns about incisional integrity-

   0 1 2 3 4 5 6 7 8 9 10
   None Some Significant



Question Number	Average
1	6.7
2	6.3
3	6.2
4	8.2
5	2.0

Therapists' average concern ratings across the time frame decreased from a rating of 6.9 prior to working with any of these patients with the new closure technique to 2.0 as noted on the self-reported survey tool 1 year out. This indicates a significant decrease in concerns regarding incisional integrity after actually working with this population for a year and potentially reflecting a lack of incisional issues with standard PT/OT post operatively.

Recommendations

We recommend more research with larger patient volumes and consideration of patient specific factors for post op wound healing.