The Effect of Dermal Suture Material on Complication Rates and Patient Satisfaction: Monocryl vs. Vicryl

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Introduction

- Functional and cosmetic outcomes from dermatologic procedures are important to consider as patient expectations rise and new suture materials are developed. The purpose of the current study was to determine whether complication rates and patient satisfaction rates differ between monofilament and braided sutures.
- Methods: Four hundred thirty-three patient records were retrospectively reviewed for complication rates after closure of dermal excisions with monofilament or braided sutures; data were analyzed and controlled for confounding variables. Patient satisfaction was analyzed by a self-made questionnaire sent electronically, and mean differences between the monofilament and braided sutures were analyzed.
- Results: Two hundred forty-two participants who underwent closure with Monocryl or Vicryl sutures were invited to complete this survey. Fifty-two of these participants completed the survey, representing a 21.5% completion rate. Survey completion differed between groups (P=0.76) or patient satisfaction rates (P=0.78) between monofilament sutures and braided sutures.
- Conclusions: Based on the data, there is no statistically significant difference in complication rates and patient satisfaction rates between the use of monofilament or braided sutures. Therefore, surgeons may elect to choose the type of suture used in dermatologic procedures based on ease of handling and knot tying properties in lieu of complication rates or patient satisfaction rates.

Materials and Methods

- Functional and cosmetic outcomes become increasingly important as patient expectations rise and physicians learn of materials and techniques that achieve smaller surgical scars.
- The two most common suture materials are monofilament Monocryl and braided Vicryl, which are both synthetic absorbable sutures.
- Monocryl – monofilament
  - Low tissue drag, significant tensile strength, low bacterial adherence
  - Difficult to handle, retains memory of the package, frequent knot slippage
- Vicryl – braided
  - Easily manipulated, good knot tying qualities
  - Braided nature may promote tissue infection and reactivity
  - Favored by dermatologists due to ease of handling and secure knot tying properties
- Clinical outcomes of the use of Monocryl and Vicryl sutures were evaluated by retrospectively reviewing patient charts for complications. Patient satisfaction rates for each suture type were evaluated with a patient survey.
- We hypothesized that complication rates would be lower and patient satisfaction rates would be higher for patients who had dermal excisions with closures utilizing Monocryl sutures.

Results

- Four hundred thirty-three patient records were reviewed: 340 participants received Monocryl sutures and 93 received Vicryl sutures.
- Complication Rates:
  - 32 (9.4%) participants with Monocryl sutures had complications
  - 10 (10.8%) with Vicryl sutures had complications
  - No differences found for the confounding variables: smoker (P=0.95), chronic medical condition (P=0.82), problematic medications (P=0.35), or cancerous excision (P=0.44)
  - The probability of complication was 0.008 for Monocryl sutures and 0.01 for Vicryl sutures; no significant difference found in complication rate with either suture type (P=0.76).
- Patient Satisfaction Rates:
  - Fifty-two participants in the Monocryl group completed the survey out of 242 invited (21.5%).
  - Fourteen participants closed in the Vicryl group completed the survey out of 64 invited (21.9%).
  - No significant difference was found in the median satisfaction scores for the Monocryl and Vicryl groups (P=0.91).

Discussion

- Complication Rates
  - Retrospective analysis of patient records found no significant difference in complication rates between Monocryl and Vicryl sutures.
  - There were no significant differences in complication rates for any of the measure confounding factors.
  - We suggest that the type of suture material used should not be selected based on complication rates.
- Patient Satisfaction Rates
  - There was no significant difference in the mean patient satisfaction scores between the Monocryl and Vicryl study groups.
  - We suggest that patient satisfaction should not affect the decision on the type of sutures used.
- Future studies evaluating surgical and sterile techniques may provide insight into factors that alter complication rates and patient satisfaction rates.

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References