How Blunt is Blunt?

Choosing and Using Blunt Suture Needles

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Blunt suture needles, which have been commercially available for more than ten years, are sharp enough to pierce internal tissue, such as muscle and fascia, but not sharp enough, under most circumstances, to pierce skin. A CDC study found an 81% decline in suture needle injury rates following the introduction of blunt-tip suture needles during gynecologic surgery; another study found that substituting blunt suture needles for sharp-tipped ones for all appropriate applications could potentially reduce suture needle injuries in ORs by as much as two-thirds. In the following article, Dr. Davis discusses some of the technical aspects of choosing, and using, blunt suture needles. The article is excerpted from a chapter on “Blunt Alternatives to Sharps” in Dr. Davis’s book Advanced Precautions for Today’s OR (Atlanta, GA: Sweinbinder Publications, 2001; pp. 55-57. Information available at: www.orprecautions.com). We thank him for permission to reprint this information in AEP.

The range of bluntness in commercially available blunt suture needles varies considerably and may undergo further change as surgeons provide feedback to industry. The least blunt needles currently available (Ethicon, Inc.’s Ethiguard line) require almost no additional conscious effort by surgeons to penetrate tissue, while retaining most of their protective advantage. These work well for most applications, including episiotomy repair. The difference compared to a sharp needle is almost imperceptible.

In fact, one of the author’s favorite “tricks” is to ask the obstetrician or surgeon assisting him to close the fascia on the assistant’s side of a Pfannenstiel incision, and then ask if the assistant realized he or she had used a blunt needle. After such a demonstration, surgeons will usually ask for a change to blunt sutures on their preference cards. The least blunt needles may be used almost anywhere in abdominal and pelvic surgery, with the exception of bowel anastomosis.*

When suture needles with an intermediate degree of bluntness are used, a minimally conscious effort is required to penetrate tissue such as fascia. Although perhaps not as popular as the least-blunt variety, these needles may be chosen for fascial closure and for increased protection of the gloves and fingers when operating on patients with known bloodborne pathogens.

Suture needles that are extremely blunt tipped do not penetrate tissue such as fascia easily and should not be used for this purpose. Their use may be appropriate in those unusual situations in pelvic and abdominal surgery where the needle absolutely must be retrieved with the fingers. If extremely blunt-tipped needles are incorrectly chosen to suture dense tissue, such as scarred fascia, a point of diminishing return is reached. The hazard may be increased by bending or breaking of the needle, resulting in sudden unintended motion of the needle and possible injury.

In summary, the selection criteria for blunt suture needles should be determined primarily by the density of the tissue being sutured; another factor might be the risk status of the patient. Choose from the available menu of blunt suture needles, and match the bluntness of the tip to the suturing task. What needs to be emphasized is that the full range of blunt needles all have a place in the surgical armamentarium. As the variety of blunt suture needles continues to expand, operating room professionals should avail themselves of the opportunity to evaluate various needles for specific suturing tasks, and establish optimally safe suturing protocols. 

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* A report from Scotland indicated successful use with bowel anastomosis, but the needles employed by the authors were reusable Mayo needles that had been blunted in the hospital workshop and the degree of bluntness was not described.

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Blunt suturing technique

When selected and used optimally, blunt-tipped suture needles are efficacious and user-friendly. The following method has been found to yield maximum performance. The blunter the tip, the more important it is to follow these points of technique.

- Use a strong needle holder and fully activate the lock.
- Mount the needle in the mid-curve, rather than ¾ of the way back, to prevent slippage or bending of the needle. (This is not always necessary when using minimally blunt needles.)
- Grasp and stabilize the tissue to be sutured to facilitate needle penetration.

Pitfalls and cautions include the following:

- The less blunt the point, the greater the possibility of a glove puncture; thus, it is always advisable to avoid manual handling of any and all suture needles, whether blunt or sharp.
- Blunt GI needles made of thin-gauge wire construction with a thin point could cause a percutaneous injury if a blow to the skin is delivered with force.
- To avoid needle breakage, thin-gauge needles should not be used with dense tissue.
- Blunt needles of general closure size, especially those with minimally blunt points, could also cause a puncture if a blow to the skin is delivered with force.
- Carefully read labels on suture packs to verify blunt rather than sharp needles were pulled.