
Conclusion and summary

The biofragmentable anastomotic ring (Valtrac; Davis and Geek, Wayne, New Jersey, USA) is a device used to construct an inverting intestinal anastomosis. It is composed of polyglycolic acid and barium sulphate, and provides a mechanically locking connection that maintains the serosal surfaces of the bowel ends in apposition until healing occurs. Once the two caps of the ring are inserted into the ends of the bowel and the purse-string sutures are tied snugly around the device, the ring is locked by pressing on its caps until they are approximated and "click" together. However, the instruction manual for the Valtrac ring points:

"...click may occur infrequently in the absence of secure closure. Secure closure may occur in the absence of a click. Inspection and gentle traction are recommended to reassure the surgeon that proper closure has been obtained."

A simple method of testing the closure of the ring without risking disruption of the anastomosis has been devised, the ring is grasped with the index and middle fingers and the thumb at the junction between the two caps and gentle pressure applied tangentially. If closure is not secure, the two caps separate easily and another attempt can be made to close them.

In all cases of faulty closure, reapproximation of the caps was successful on a second attempt. The manual compression needed to effect closure of the device when performing the anastomosis may worry surgeons, however, and the narrower internal lumen of anastomosis with the BAR compared with a manual suture of the same external diameter may increase the risk of post operative obstruction or stricture formation.

We have not found an increased risk of complications during or after operation with the BAR; indeed, the ring made anastomosis easier in some patients compared with manual sutures.

There were no early clinical or subclinical leaks, nor any late leaks following fragmentation of the device. Reservation about the integrity of sutureless anastomosis are therefore unfounded. Use of the BAR has positive advantages, and the fear of anastomotic complications appear to be groundless.

This experience seems to confirm, with other authors, that BAR provides an effective anastomosis method: it gives a completely inverted, nonischaemic anastomosis, without additional incision nor residual foreign bodies. It shortens operating times and its technique seems to be easy to learn and to perform. Complications and mortality are not increased even in case of multiple anastomosis.