A Case of Mitral Annulus Disjunction Repaired with the “Snail” Technique

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Central Picture Legend

Picture showing the knotted artificial chords looking like a snail, hence the nickname.

Central Message and Perspective Statement

The snail technique is utilized for repairing posterior leaflet prolapse when the posterior leaflet has excess of tissue and/or irregularities due to myxoid degeneration.

Case Summary

The "snail" technique is used to treat posterior leaflet (PL) prolapse in case of excess of tissue, and/or irregularities resulting from myxoid degeneration. Many techniques have been proposed to deal with this situation [1-3], some of them cumbersome. This is an extension of the “Respect approach”[4]. The presented case demonstrates a typical instance of Mitral Annulus Disjunction. Preoperative echocardiography revealed a bileaflet prolapse. However, surgical valve analysis did not identify anterior leaflet prolapse, which is usual in those circumstances.

In a standard scenario involving the P2 segment, artificial chordae consisting of 2X2 strands are secured to the posterior heads of both the anterior and posterior papillary muscles [5]. These chordae are then passed through the free edge of the PL, making sure to pull it gently but with no tension to avoid restriction. The sutures are brought several times through the leaflet before going through the mitral annulus. They are then brought superficially through the endothelium of the left atrium (to avoid the circumflex artery) 1.5 cm behind the annulus to avoid interfering with the annuloplasty ring. A more precise measurement of the artificial chordae's length is unnecessary, but care must be taken to prevent excessive tension.
The annuloplasty ring is sized according to the surface area of the anterior leaflet. Following the completion of the procedure, the PL will hang vertically from the mitral annulus, remaining within the inflow and eliminating the risk of systolic anterior motion. The coaptation surface will be optimal, and artificial chordae will connect the papillary muscles to the mitral annulus.

In conclusion, this versatile and easily reproducible technique allows to grandly simplify the approach of patients with excess of tissue. It has become our preferred technique to treat prolapse of the PL, and we only avoid it in the absence of excess tissue.

REFERENCES


