MitraClip XTr and NTr in functional Mitral Regurgitation

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☑ I have the following potential conflicts of interest to report:

Receipt of honoraria for medical proctoring or consulting fees from:
  - Abbott Vascular,
  - Edwards Lifesciences,
  - GE, Philips Health Care, Siemens Healthineers
Spectrum of Mitral Regurgitation

**Functional Mitral Regurgitation (FMR)**

LV Dysfunction
- Dilated Annulus
  - (Non-ischemic or ischemic dilated cardiomyopathy)

LA Dysfunction
- Dilated Annulus
  - (Chronic atrial fibrillation, hypertension)

Loss of leaflet coapation due to:
- annular enlargement
- Papillary muscle displacement causing leaflet tethering/tenting

**Etiologies**
- Advanced Barlow’s Disease
- Fibroelastic deficiency (affects leaflets and annulus)

Leaflet prolapse due to:
- Leaflet deformities or lesions
- Ruptured/ elongated chordae
- Papillary muscle rupture

**Degenerative Mitral Regurgitation (DMR)**
Caveat: 64% FMR to look for

JF Obadia et al NEJM 2018 (MITRA-FR) and G.Stone/M.Mack et al NEJM 2018 (COAPT US – pres. @ TCT2018)

David Adams @ MVM 2018: „If COAPT may be positive, (the Germans) will say I told you so“
HVC Mainz MITRACLIP® NTR and MITRACLIP® XTR: 3RD-GENERATION SYSTEM

**MitraClip NTR**
The original MitraClip NT size, with an improved CDS.

**MitraClip XTR**
+5mm*
Longer arms for easier grasping and more coaptation length,¹ with an improved CDS.

**MitraClip® 3rd-Generation Design Intent:**
- Achieve further MR reduction
- Expand the range of MV anatomies treatable with MitraClip
- Increase steering precision and ease-of-use
- Reduce device time and # clip rate

¹This figure reflects the additional grasping width achieved with the MitraClip® XTR Clip.

1. Tests performed by and data on file at Abbott
Experience from early commercial use following CE Mark*

- 24 European centers
- 150 procedures

Patient Baseline Characteristics
- Etiology
- Valve Anatomy Complexity

NTR/XTR Use
- % XTR
- % NTR

Results
- MR Reduction 84% MR≤1+
- Confirmed safety for MitraClip NTR and MitraClip XTR
- Reduction in the number of grasping attempts with XTR
- Better Steering and Grasping performance of NTR/XTR vs NT

* Post Market Evaluation conducted by Abbott.
XTr Procedural concepts
– Huge arm length 12 mm and chordal tensioning
Procedural concepts Clip tension XTR
Procedural concepts Clip tension XTR NTr final
FMR Case 1: XTR in FMR
FMR Case 1: XTr Clip Orientation, Size and Grasp
FMR Case 1: XTr Clip Orientation, Size and Grasp
FMR Case 1 : XTr Perfect Result
FMR Case 2: Size of XTr versus NTr
FMR Case 2: Size of XTr versus NTr
FMR Case 2: imperfect XTr versus NTr
FMR Case 2: Size of XTr versus NTr
FMR Case 2: Size of XTr versus NTr
FMR Case 2: Size of XTr versus NTr

<table>
<thead>
<tr>
<th>TEE MV</th>
<th>TIS0.5</th>
<th>MI 0.2</th>
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<tbody>
<tr>
<td>X8-2t</td>
<td></td>
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<tr>
<td>10Hz</td>
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<td>5.7 cm</td>
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3D-Schläge 1

- ED: % 51 / 50
- 5/99Hz
- WF: 5/99Hz
- 3.3MHz

PAT T: 37.0°C
TEE T: 38.7°C

52 /min
Improved Mitral Valve E2E repair with new devices XTR more annulus involvement
Improved Mitral Valve E2E repair with Annulus reduction and AP anterior movement in compliant PMRing
• MitraClip XTR and NTR offer **two different leaflet insertion length options to FMR treatment**

• XTR need compliant posterior Mitral ring structures and enough tissue reserve like in DMR
easy to grasp, but **coaption length is pushed to 12 mm** maximum, ideal for
large non-calcified annulus in A2P2 both DMR FMR

• NTR is identical in treatment options as NT in FMR
less AP shortening, **less leaflet stress, 9 mm coaptation length**
better option for small annulus, nodular calcification,
better suited for FMR with chordal and leaflet restriction

• Both new MitraClip options are safe, **XTr has to be used with caution to avoid leaflet damage** – if in doubt use NTr