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A REVIEW OF THE MANAGEMENT OF MESH EROSIONS FROM TENSION FREE VAGINAL TAPES

Hypothesis / aims of study

Mesh erosion is a rare but troublesome complication. Different methods have been described in the literature, for the management of these cases. These can be treated with conservative surgery (1), more radical and complete mesh removal, cystoscopically, laparoscopically and via laparotomy; depending on where the mesh erodes.
The aim of the study was to review the management of mesh erosions from tension free vaginal tape procedures, in a teaching hospital, over a 4 year period. Both the retropubic approach (TVT) and transobturator route (TVT-O) tapes were investigated.

Study design, materials and methods

Between January 2004 and January 2008, 428 tapes were performed under the care of one named consultant and her team, in a busy tertiary referral teaching hospital. There were 12 known mesh erosions, within this time period, from a review of the theatre diaries. One of the mesh erosions was referred from another colleague for management.

The notes of the women, in which mesh erosions were diagnosed, were reviewed. The records revealed data on previous operations, presenting complaints and time span from the tape procedure to the mesh erosion diagnosis. Subsequent management of the erosion, continuing stress urinary incontinence and any further surgery were also noted.

Results

428 tension free vaginal tape procedures performed, 307 were TVT procedures and were 121TVT-O procedures. There were 12 known mesh erosions, which all required surgical intervention, including one TVT which was referred from another colleague for management.
There were 8 TVT tapes (2.60%) and 3 TVT-O tapes (2.47%) which eroded. Overall the rate of mesh erosions was 2.57%.

		erosions	% erosions
Number of TVT	307	8+1*	2.60%
Number of TVT-O	121	3	2.47%
Total of tapes	428	11+1*	2.57%

* Referred from another consultant

The mean time that had elapsed between the tape procedure and presenting with mesh erosion was 20 months. The time elapsed varied from between 1 to 52 months.

The women presented in a variety of ways including: urgency, feeling the fibres, dyspareunia or sharp pain. 2 women presented because their husband felt the fibres during intercourse. One woman presented with faint haematuria during exercise.
All the women but one had anterior vaginal wall or periurethral mesh erosions. These were often in the midline and were resected transvaginally. Often the skin was adherent to the tape, this was dissected free, the tape transected and the visble mesh trimmed. The skin having been released, was oversewn using vicryl. The majority of the women were then asymptomatic and still continent. One woman had a resumption of her stress urinary incontinence, therefore had a TVT-O, which was successful.

Four women had further trimming of tape and the symptoms resolved. One woman had persistent dyspareunia and had the tape trimmed more laterally and extensively. The dyspareunia resolved but her stress urinary incontinence returned. The symptoms however resolved after a TVT-O, with no further known sequelae

One woman presented with leaking when running, prior to the primary procedure. She had tried pelvic floor exercises and biofeedback previously, but this had not helped. She was therefore offered a TVT. There were no intra-operative problems during the primary procedure and a post TVT check cystoscopy was performed and was normal. She made a good post operative recovery and was continent.
Three years after the primary procedure she presented with faint haematuria during exercise. There were no abnormal findings on urogynaecological examination. Cystoscopy revealed a portion of the tape within the right side of the bladder dome and some stone formation. The portion of tape was removed cystoscopically and the stones crushed using a stone crusher.
At the end of the procedure no further tape was seen or any bladder damage noted. She was followed up after 4 months and had no stress incontinence. However she had developed urgency symptoms which were successfully treated with antecholinergics. She had experienced a further episode of haematuria after a long run. She was reviewed again after 12 months and had frank haematuria. A further cystoscopy showed further tape erosion and was therefore revised.
A year later she presented with further haematuria and magnetic resonance imaging (MRI) ascertained there was the presence of tape in right lateral dome of the bladder. This was confirmed at cystoscopy. Further stones were removed but the fibres proved more difficult to remove at their base. She was therefore referred to a urologist who intended to perform laser therapy intravesically. If this is unsuccessful, the likely course of action would be an open partial cystectomy.

Interpretation of results

The risk of mesh erosion via the vagina or urethra has been reported to be 0% to 12%. (3) Only one of the women had any intra-operative complications at the primary procedure. This was a bladder perforation. She later presented with anterior wall mesh erosion.
One woman had intravesical tape erosion. The reason for this may have been a missed primary bladder perforation, although this was carefully checked. Submucosally placed tapes may cause secondary erosion. The urine and the propylene mesh can lead to tape incrustation and stones.(2)

The tape is tolerated differently by different women, which may be due to disturbed wound healing. As the main cause of this is chronic inflammation, resection or partial resection of the tape is beneficial.(2) This rather chronic course of events, would be in keeping with a mean presentation time after procedure being nearly two years, in this study.

The majority of the women who presented in this study had previous vaginal surgery and were obese. In most circumstances, partial resection of the tape along with conservative measures such as weight loss, improved symptoms.

Concluding message

Mesh erosion was a rare complication in our study (2.57%). It has been successfully managed in the majority of cases with merely trimming and oversewing the visible tape. When more extensive resection of tape occurs, unfortunately stress urinary incontinence can resume. This can be resolved with a repeat tape procedure, with no known further tape erosion.
The treatment of the bladder tape erosion has proved more difficult and may require more extensive resection of the tape to resolve her symptoms. As this is a long term study, it has demonstrated that there can be a long lag time between primary procedure and presenting with symptoms and signs of mesh erosion.

References

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Is this a clinical trial?	**No**
What were the subjects in the study?	**HUMAN**
Was this study approved by an ethics committee?	**No**
This study did not require eithics committee approval because	**This study involved reviewing the notes of women who had mesh erosions from transvaginal tapes. Ethics approval was not necessary as this was retrospectively reviewing the management of mesh erosions, thus not affecting the care of the women in any way. It was merely recording what occurred as a result of their complication. The study has been a general overview of the management of this complication and the results have been analysed anonymously, with no personal identifiable information.**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**No**