



What is the role of the multidisciplinary team meeting in primary prolapse surgery and are alternative formats acceptable?

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Abstract

Introduction and hypothesis In 2019, the UK National Institute for Health and Care Excellence (NICE) recommended discussion of all primary prolapse cases at a multidisciplinary team (MDT) meeting prior to surgery. However, following the COVID-19 pandemic, face-to-face meetings were suspended. The aim of this study was to evaluate the role of MDT meetings in an observational retrospective review of primary prolapse cases and determine whether alternatives to face-to-face MDT meetings such as virtual and remote paper result in different outcomes.

Methods A total of 100 consecutive patients with primary prolapse, who had already been through face-to-face MDT meetings in 2019, were subjected to remote paper (independent review by team members, who then submit a paper outcome to the MDT meeting chair) and a virtual MDT meeting by the same team (blinded). Outcomes included agree, minor amendment (changing the order of priority of the compartment, changing procedure from + to +/-), major amendment (adding/removing a compartment) and insufficient information. MDT outcomes were compared for remote paper, virtual, and face-to-face MDT options.

Results In 88% of cases, face-to-face MDT meetings agreed to proceed unchanged (4% minor amendment, 7% major amendment, 1% insufficient information). This compared with 80% at virtual MDT (5% minor amendment, 11% major amendment, 4% insufficient information) and 74% when conducted by remote paper (5% minor amendment, 15% major amendment, 6% insufficient information). There was no significant difference in outcomes among the MDT meeting formats (Chi-squared 7.73, $p=0.26$).

Conclusions Multidisciplinary team discussion changes management in a minority of primary prolapse cases. Similar MDT decisions are produced by virtual and remote paper formats, although the latter had the lowest concordance of opinions.

Keywords Multidisciplinary team · MDT · Primary prolapse · Remote MDT · Virtual MDT

Introduction

In 2019, the National Institute for Health and Care Excellence (NICE) issued guidance in the UK recommending that all cases of primary prolapse repair should be discussed at local multidisciplinary team (MDT) meetings prior to surgery. According to NICE, a local MDT should consist of two consultants with expertise in managing pelvic organ

prolapse, a urogynaecology/urology/continence specialist nurse, and a pelvic floor physiotherapist as core members. Although not essential, the MDT may also include a member of the care of the elderly team, an occupational therapist and a colorectal surgeon. A local MDT is to be distinguished from a regional MDT, which involves a more specialist team for review of complex and recurrent prolapse cases [1].

Although there was no existing evidence regarding the use of MDTs in urogynaecology at the time the NICE guidance was published, MDTs are a well-established part of clinical care in the UK. NICE made recommendations on the basis of expert consensus opinion that pelvic organ prolapse and urinary incontinence are complex conditions, can co-exist, and that surgical complications (which may include mesh complications) can be challenging [2].

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However, there may be wider benefits of MDT, such as better cooperation, as each discipline comes to better understand the roles and limitations of the others. An MDT can also highlight issues not traditionally covered by one specialist field, such as sexual dysfunction, and other concurrent pathological conditions. This collaboration removes the traditional, focused, organ-specific approach and encourages a more global, multi-dimensional, holistic and patient-centred solution across disciplines [3]. Kuroki et al. also observed that patients discussed at MDT meetings were 2.5 times more likely to enrol in a clinical trial, which would be useful in this patient group, as there remain many unanswered questions regarding the best approach in primary prolapse surgery [4]. MDT also offers an opportunity for training, dissemination of information and a forum for presentation of local audit and service evaluation as well as morbidity and mortality case review. Furthermore, documentation of MDT discussion and consensus may reduce the risk of subsequent litigation [5].

Nevertheless, MDT meetings are expensive and time-consuming processes. The estimated total monthly cost of cancer MDTs in gynaecology at one NHS Hospital in the UK is £101,880 [6]. This calls into question the cost-effectiveness of MDTs when used for routine cases, particularly if management plans are changed infrequently. A study by Leso et al. showed that in a cohort of 81 cancer patients, individual consultant plans before and after MDT decision were identical in 87.6 % [6], whereas in a study by Rao et al. a “high-impact” change to the management plan was made in 26.7% of patients with urological cancer [7].

Furthermore, an MDT recommends a plan to a patient as opposed to the patient requesting a particular treatment, and thus the nuance of the process is arguably not patient-centred in its approach. This is particularly relevant in benign conditions in which patients are confronted with a range of different surgical options and are encouraged to make an individualised decision. In addition, the necessity for MDT could potentially introduce a delay in the patient accessing their treatment if they have to wait for their case to be discussed first.

Following the COVID-19 pandemic, the majority of face-to-face (F2F) meetings such as MDT were suspended and alternative formats of MDT meetings developed. The aims of this study are twofold: first, to evaluate the role of MDT in an observational retrospective review of primary prolapse cases, and second to determine whether a virtual team or a remote paper MDT (clinicians reviewing notes in isolation) result in different outcomes when compared with F2F MDT meetings.

Materials and methods

This was a registered service evaluation project at a tertiary university hospital (project number 9696). Formal ethical approval was not deemed necessary.

A retrospective case note review for 100 patients with primary prolapse, who had already been through F2F MDT in 2019, was undertaken. British Society of Urogynaecology (BSUG) MDT forms were completed for each case (data anonymised). Data collected included age, BMI, presenting complaint, other symptoms, previous surgery, comorbidities, parity, whether sexually active, pelvic organ prolapse quantification (POP-Q) system score, results of investigations, previous treatment of the condition, information leaflets given to patient, and management options discussed.

These forms were then blindly and independently reviewed by three urogynaecology consultants and their decisions compared (remote paper MDT). Of note, there was no opportunity for discussion of points of contention via the remote paper MDT format. A virtual team MDT was also performed for the same cohort of patients via Microsoft Teams using the information provided in the BSUG MDT forms. The same team of three urogynaecology consultants participated in the original F2F, virtual and remote paper MDTs. Five remote paper and 3 virtual MDTs were held between September 2020 and September 2021. The different MDTs (virtual/remote paper) were performed several weeks apart to allow for blinding. There were no publications of note or changes in national guidelines regarding management of primary prolapse in the time between the MDTs that would be likely to influence the decisions made.

Remote paper case review was performed at the consultants’ convenience during office hours and returned to the MDT chair by the end of the week (20 cases per MDT). F2F MDT meetings were held for 30 min on a weekly basis, with an average of 8 cases per meeting (100 consecutive cases selected from meetings held September to November 2019). Three virtual MDT meetings were held (30–40 cases discussed per meeting), each lasting approximately 2 h.

Outcomes were compared for the remote paper format, the virtual MDT meeting and the original F2F MDT meeting conducted in 2019.

Outcomes were categorised as agree, minor amendment (which included changing the order of priority of the compartment or changing the procedure from + to +/-), major amendment (which involved adding/removing a compartment or changing the approach) and insufficient information. A Chi-squared test was used to calculate the statistical difference between the outcomes of the three MDT formats.

Results

The mean age of the patients was 61.1 years old (range 36–83 years). The mean BMI was 27.1 (range 18–42). The mean parity was 2.4 (range 0–5). Ten of the 100 patients had undergone previous hysterectomy (for reasons excluding prolapse).

Figure 1 depicts the outcomes for each of the MDT formats. At the F2F MDT meeting, it was agreed in 88% of cases to proceed unchanged, with 4% minor amendments, 7% major amendments and 1% with insufficient information. At the virtual MDT meeting, it was agreed in 89% of cases to proceed unchanged, with 5% minor amendments, 11% major amendments and 4% with insufficient information. At the remote paper MDT, it was agreed in 74% of cases to proceed unchanged (all three consultants agreed), with 5% minor amendments, 15% major amendments and 6% with insufficient information.

There was no significant difference in outcomes among the three MDT formats; Chi-squared 7.73, $p=0.26$.

Major amendments were made in a total of 21 cases. In 11 of these cases, major amendments were made in more than one MDT format (52%). Tables 1 and 2 detail the nature of the major and minor amendments.

Of the 7 cases awarded an “insufficient information” outcome, 5 were due to incomplete POP-Q assessments, 1 was due to the proforma not stating the planned procedure, and 1 was due to the proforma not stating patient preference for either vaginal hysterectomy or laparoscopic sterilisation. With the exception of the latter, the additional information did not change the procedure planned.

Consistent agreements were reached in the majority of cases across MDT formats. These included a cut-off value

Table 1 Minor amendments

	Face-to-face MDT meeting	Virtual MDT meeting	Remote paper MDT format
Change in order of priority of compartments	0	0	0
+ changed to +/- or vice versa	1	3	1
Both of the above	3	2	4

MDT multidisciplinary team

of cervical descent to a minimum of –3 cm above the hymen in order to add +/- vaginal hysterectomy to a pelvic floor repair and offering a two-stage procedure if both anterior and posterior vaginal wall repairs were required in someone wishing to preserve sexual function [8].

In some cases, clinicians did not dispute the treatment proposed (i.e. agreed to proceed unchanged), but expressed a personal preference relating to their own practice, e.g. for Manchester repair as an alternative to vaginal hysterectomy (7 cases).

There were no noteworthy differences in the total time taken to conduct the MDT meeting among the different MDT formats.

Discussion

Main findings

The highest proportion of cases in which it was agreed to proceed unchanged was seen at the F2F MDT meeting (88%), followed by the virtual MDT meeting (80%) and the

Fig. 1 Multidisciplinary team meeting outcomes

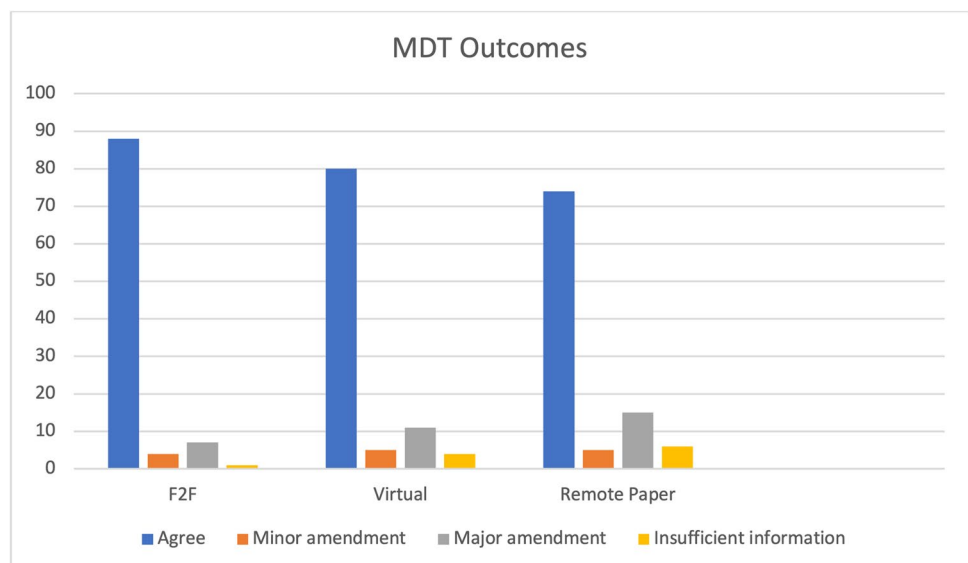


Table 2 Major amendments

	Face-to-face MDT meeting	Virtual MDT meeting	Remote paper MDT format
Compartment added or removed			
Anterior repair added	1	1	1
Anterior repair removed	0	0	0
Posterior repair added	1	3	6
Posterior repair removed	2	1	0
Vaginal hysterectomy added	1	2	1
Vaginal hysterectomy removed	2	2	3
Sacrospinous fixation added	0	3	4
Sacrospinous fixation removed	0	0	1
Offer two-stage procedure	0	1	1
Change of route (abdominal/vaginal)	0	0	0

MDT multidisciplinary team

remote paper MDT option (74%). It is perhaps not surprising, given that there was no opportunity to discuss points of contention via the remote paper MDT, that this format would see the lowest levels of agreement; however, this does not account for the differences seen between the F2F and virtual platforms. It may be that clinicians are less critical at F2F MDT, may be more likely to rely on others paying attention, or are more inhibited in their behaviour in F2F scenarios.

Arguably, in the 74–88% of cases in which it was agreed to proceed unchanged, the MDT plays an important role in endorsing and validating the management plan, thereby giving it the backing of the entire MDT, an important factor from a medico-legal perspective, as well as with regard to patient satisfaction and confidence [5]. It also provides an opportunity to check that pre-requisites for surgery have been met, such as patient information leaflets and patient decision aids provided, consent form signed, alternative treatments discussed, patient-reported outcome measures completed, pre-operative considerations, e.g. arranging removal of a pessary, anaesthetic pre-operative assessment, etc., thereby acting as an important safety net.

It is important to consider whether MDT for primary prolapse cases is a cost-effective measure in a resource-limited health care system. Prolapse is a common condition, with 11% of women undergoing primary prolapse surgery during their lives; a percentage set to increase as obesity levels rise and there is an increasingly aging population, thus creating a heavy burden on services if all these cases are to be discussed in future [9, 10].

There was no significant difference in outcomes among MDT formats, suggesting that virtual and remote paper are acceptable alternative formats to F2F meetings, although there is no opportunity to discuss points of contention with the remote paper option, which can pose some logistical difficulties for the chair in terms of communication between

members where required. The preferred mode of MDT cannot be concluded from this study. It remains, to some extent, subjective. There remain advantages to F2F meetings, including building effective working relationships with all members of the team, a sense of comradery and working together towards a common goal, and an opportunity for dissemination of clinical updates, audit, local research and service developments [11]. The higher rates of difference of opinion seen in the remote paper format may suggest that individual review of cases prior to F2F/virtual MDT may enrich discussion and add to the rigour of the MDT process, although this process would clearly cost more clinician time.

Context in the existing literature

The existing literature regarding MDT in urogynaecology does not evaluate primary prolapse patients specifically and therefore is not directly comparable.

Gopinath and Jha in 2015 reviewed the outcomes of 106 cases discussed within a urogynaecology MDT. These cases included recurrent prolapse/incontinence, BMI >35, extremes of age, mesh procedures, laparoscopic colposuspension, post-operative complications and multicompartiment pathology, i.e. not uncomplicated primary prolapse cases, reflecting the referral criteria to MDTs at this time. The MDT recommended a change in management plan in 29.3% and thus the authors concluded that the MDT is beneficial to patients as it provides an effective clinical forum for robust decision making in order to formulate management plans for complex cases. The higher proportion of patients in which MDT recommended a change in management plan (29.3% vs 12–26% in the present study) reflects the complex nature of these cases [12].

In 2019, Wales et al. reviewed the outcomes of 123 MDT cases and reported that changes were made to the

management plan in 31% of cases. The majority of referrals were to discuss possible invasive treatment for urinary incontinence (57%), as well as recurrent vaginal prolapse and vault prolapse, i.e. very few patients with primary prolapse. Again, the higher proportion of patients in which the MDT recommended a change in management plan (31% vs 12–26% in the present study) reflects the complex nature of these cases [13].

Also in 2019, Pandeva et al. published outcomes following a joint pelvic floor MDT meeting for women with pelvic floor dysfunction. This study involved women referred to a joint pelvic floor MDT meeting with representation from urogynaecology, urology and colorectal departments and thus most patients were likely to have multi-compartment pathology and are therefore again not directly comparable with our cohort (80% reported to be “complex” in nature). However, the results were similar in terms of the MDT recommending a change in the initial management plan in 20% of cases (versus 12–26% in the present study) [14].

Although the three studies above provide evidence of the proportion of cases in which management plans are modified by MDTs, there is currently no evidence that MDT meetings in urogynaecology result in changes in clinical outcomes or patient-reported outcome measures.

For patients with cancer, in which the evidence base for MDT is well established, MDT meetings have been shown to improve clinical outcomes, standardise patient care across different units and facilitate the development and implementation of evidence-based decisions [15–19]. However, MDTs have not been uniformly successful across all settings. Stokes et al. report that primary care MDT meetings, designed to reduce hospital admissions for complex patients, were not successful in their aim [20].

Balachandran and Duckett discuss the potential advantages and disadvantages of MDT use in urogynaecology in their paper in 2015: MDT meetings remove the risk of one individual making decisions without full consideration from other specialists with similar knowledge; groups are in general more capable than individuals and as such MDTs afford the patient the opportunity to harness the expertise from the varied experience of the MDT rather than one individual clinician. The process thus offers protection to patients and clinicians through mutual accountability in decision making [15].

The Social Care Institute for Excellence (SCIE) reported in 2018 that “MDTs do not necessarily have to be located in the same premises to work successfully”, in line with the findings of the present study, that virtual and remote paper MDT formats produce similar outcomes to F2F MDT meetings. SCIE also warned that; “whilst theoretically MDTs facilitate collaboration and improve outcomes for patients, the success of an MDT is not guaranteed. If MDT is not well organised or executed it may have no impact or even

a negative impact on care. Institutional support is key to ensuring that MDT has the necessary resources available to provide the service asked of it” [21]. The majority of urogynaecology MDTs are not adequately resourced in terms of tariff payment, inclusion in job plans and payment for coordinating/supporting [15]. This leaves urogynaecology MDTs potentially vulnerable, despite the expanding workload and mandate from NICE.

In this study there was no significant difference in the time taken to conduct MDT meetings in the different formats. This is in line with Rajasekaran et al., who reported that in a clinician survey of virtual MDT meetings, 72.8% were happy with the depth of discussion and 83.3% felt that decision making had not changed as a result of the switch from F2F, suggesting that case discussion and thus time taken is similar to F2F meetings. However, virtual MDT meetings may offer advantages over F2F in terms of convenience and clinician time saved in travelling, particularly for multi-site organisations [22].

Dulai et al. in 2020 compared the cost-effectiveness of virtual versus F2F MDT meetings for cardiac patients and reported a cost saving of 48.9% associated with the virtual MDT, largely relating to time and cost of travel required for F2F MDT meetings [23]. As MDTs are not funded at this institution, we are unable to comment on cost-effectiveness, but as it requires a similar amount of clinician time, it seemingly comes down to cost of room/facilities for F2F meetings versus cost of software for virtual meetings.

Strengths and weaknesses

This study is limited in its evaluation of the role of MDTs in primary prolapse surgery by the absence of a randomised control arm in which decisions were made by a single clinician. Although the consultants involved in the review process were blinded to the outcomes of the original F2F MDT meetings, the urogynaecology residents completing the BSUG MDT forms were not blinded to this. Unlike F2F MDT meetings, case notes were not available for review in order to access additional information via the virtual and remote paper MDT formats. Furthermore, as the cases had been anonymised, the consultants would be unable to answer patient-specific questions relating to their consultation in the virtual and remote paper MDT formats. Regarding virtual and F2F MDT meetings, some had two consultants present, as this was the requirement for quoracy, whereas others had three. It is potentially easier to come to an agreement between two as opposed to three consultants; therefore, the remote paper MDT option (which required all three consultants to agree) was subject to stricter criteria in some cases.

One of the criticisms of MDTs is that decisions are made *for* the patient rather than *with* the patient and in this respect, MDT is not a patient-centred process. This can be mitigated

to some degree if patient preference is reported on the MDT proforma, which is facilitated on the BSUG MDT forms used in this study.

Further research

In cancer care, protocolised treatment pathways are being developed to reduce the burden on MDTs, as patients who meet predefined criteria do not need to be discussed [24]. In the interests of ensuring that MDTs remain cost-effective and relevant, further work is required to refine the inclusion criteria for MDT referral, such as co-existent urinary or bowel symptoms, previous abdominal/vaginal surgery, co-existent medical conditions, desire to retain fertility, or extremes of age, e.g. <40 or >80. Alternatively, as a subspecialty, we accept that all patients will be discussed at MDT meetings, regardless of how unlikely the original management decision is to be changed.

In order to scientifically investigate the role of MDTs in primary prolapse cases further, the surgical outcomes from cases discussed at MDT meetings should be compared with those not discussed at MDT meetings and managed by a single clinician.

Conclusion

Multidisciplinary teams change management in a minority of primary prolapse cases. These results cannot be extrapolated to complex and recurrent prolapse cases. These changes provide an important safety net for protecting patients and providers. Similar outcomes are produced by virtual and remote paper MDT formats, when compared with F2F meetings, although there is lower concordance with the remote paper option in particular, suggesting that live MDT enables dynamic discussion and agreement. As a subspecialty we must decide whether MDTs for primary prolapse surgery are a valuable and worthy use of resources. Arguably, in the wake of the vaginal mesh scandal, any measure that affords additional protection to patients and providers is a necessary addition to urogynaecology services. However, there may be a role in future for the development of protocolised treatment pathways (endorsed by MDTs or national societies) to reduce the number of patients referred for MDT discussion.

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Declarations

Conflicts of interest None.

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