Urogynaecology: an ambulatory approach

An ambulatory approach in urogynaecology offers advantages to both patients and providers, offering significant savings on service delivery. This review provides an analysis of and information on procedures available for the ambulatory setup.

In the current status of medical practice, especially in settings such as the NHS, the emphasis is on prompt, highly effective, minimally invasive and economical management of medical and surgical conditions. Urogynaecology cannot be an exception to this development and is evolving from a traditional inpatient service to a modern ambulatory service. Government support with respect to the development of treatment centres, funding for technological advances, and creating opportunities towards staff training have certainly maintained the momentum towards this change.

'Ambulatory' literally means 'able to walk/not confined to bed' and therefore by definition both office and day-case procedures should be considered as ambulatory. As many as 60% of elective surgical procedures have been performed in day care settings in the NHS (Department of Health, 2002; British Association of Day Surgery, 2003). However, successful application of any ambulatory service is dependent on multiple factors.

Factors affecting an ambulatory approach

Infrastructural factors

Treatment centres

The National Treatment Centres Programme is a major programme of investment and reform to deliver a new model of health care to the NHS (Department of Health, 2005). It aims to provide treatment in a clean, well-designed and non-threatening environment. By separating elective and emergency care, treatment centres dramatically reduce the unnecessary cancellation of operations as a result of emergency cases. This enables the most efficient use of resources including beds, operating theatres, diagnostic equipment and staff.

Recovery units

A modern recovery unit is required with facilities to switch over to acute management and access to inpatient care.

Mr S Patwardhan *is Specialist Registrar in Obstetrics and Gynaecology and* **Mr AS Arunkalaivanan** *is Consultant Urogynaecologist and Obstetrician in the Department of Gynaecology, City Hospital, Birmingham B18 7QH*

Correspondence to: Mr AS Arunkalaivanan

Patient factors

Successful application of an ambulatory service depends on patients' medical conditions (multiple medical conditions are often deciding factors for any day surgery treatment), social support and expectations.

Hospital practitioners

Hospital practitioners should be able to:

- Adapt to an alternative day surgery approach
- Show commitment and surgical skills
- Undergo continuous training and professional development
- Apply improved anaesthetic techniques.

GPs

GPs need to have:

- Access to the service
- An ability to support patients postoperatively
- Procedural awareness
- Re-referral and emergency care

Common ambulatory urogynaecology procedures

Ambulatory urogynaecology procedures include:

- Cystoscopic procedures
- Pelvic floor repair procedures
- Procedures for urinary incontinence
- A combination of the above procedures.

Cystoscopic procedures

Cystoscopy can be performed for both diagnostic and therapeutic purposes in ambulatory settings. Cystoscopes can be rigid or flexible. In rigid cystoscopy, a 0° cystoscope is used for urethroscopy, a 12° or 30° cystoscope for diagnostic cystoscopy (including biopsy) and a 70° scope for intraoperative cystoscopy (Foon et al, 2006). Rigid scopes usually need short general anaesthetics whereas flexible cystoscopy is usually performed under local anaesthesia as it requires minimal instrument manoeuvring.

The modern cystoscopic urogynaecological surgeries include injections of bladder neck-bulking agents and cystoscopic intradetrusor injection with botulinum toxin-A (BTX-A) (*Figure 1*). Periurethral injections of bulking agents are mainly used in patients with intrinsic sphincter deficiency of the urethra but can also be used

in failed previous surgery and severe attenuation of endopelvic fascia. They are contraindicated in pure overactive bladder syndromes or in outflow obstructive conditions. Various bulking agents such as Teflon paste, autologous fat, collagen, carbon beads and dextranomer/hyaluronic acid (Zuidex, Q-Med, Uppsala, Sweden) (*Figure 2*) have been described in the literature (Appell et al, 2006; Starkman et al, 2006). However, trials suggest that periurethral injection of established manufactured bulking agents results in subjective and objective short-term improvement of symptoms (Keegan et al, 2007). This review also quotes that injection therapy may represent a useful option for relief of symptoms for a 12-month period although two or three injections are likely to be required to achieve a satisfactory result.

BTX-A is a potent neurotoxin produced by *Clostridium botulinum* and is the most potent biological agent known. Initially botulinum toxin was used in treatment of strabismus in the 1980s, but it has gained a significant popularity in cosmetic surgery and in urogynaecology. Botulinum toxin inhibits release of acetylcholine at the neuromuscular junction and in cholinergic sympathetic and parasympathetic neurones and thus at the detrusor level it virtually paralyses the injected detrusa.

The main indications for BTX-A injection are neurogenic detrusor overactivity and idiopathic detrusor overactivity (Sinha and Arunkalaivanan, 2006). There is an abundance of data to suggest that it is safe and effective especially in the management of drug-resistant overactive bladder syndromes. It can also be used for urethral dysfunctions and may play a role in the treatment of interstitial cystitis and chronic pelvic pain (Jarvis et al, 2004; Smith et al, 2004).

Pelvic floor repair procedures

It is estimated that approximately 50% of women who are currently 50 years old will live into their 90s (Mant et al, 1997). Pelvic organ prolapse is common and is seen in 50% of parous women (Beck et al, 1991). Treatment of prolapse depends on the severity of the prolapse and its symptoms, and the woman's general health. Options available for treatment are conservative, mechanical or surgical (Maher et al, 2007).

A population-based cohort study shows that re-operation is common (29.2% of cases) after pelvic repair procedures like anterior repairs and the time intervals between repeat procedures decrease with each successive repair (Olsen et al, 1997). Similar data following posterior vaginal prolapse repair quote nearly 25% as failures (Kahn, 1997). These studies have prompted modifications from conventional fascial plication to fascial defect repairs with graft augmentation.

Numerous studies have clearly demonstrated the feasibility and efficacy of pelvic floor repair under local anaesthesia with or without sedation (Miklos et al, 1995; Axelson and Bek, 2004). One such study from Kuhn et al (2006) showed >80% objective cure in anterior and posterior repair with an average operative time of 21–23 minutes. In their prospective observational study Phillips et al (2004) showed that the pain scores postoperatively were significantly less in the local anaesthesia group than in the spinal or general anaesthesia groups. Also the average time of discharge was only 7.5 hours.

Procedures for urinary incontinence

Colpocleisis

In frail elderly women who do not wish to be sexually active in the future total colpocleisis is a simple, safe and effective surgical procedure that reliably relieves these women of their symptoms without the potential hazards of vaginal suspension. The procedure is called a total colpocleisis for patients who do not have a uterus and have complete vaginal vault prolapse and a Lefort colpocleisis for patients who still have a uterus. This procedure can be combined with a transvaginal sling procedure for urinary incontinence. For some decades colpectomy and colpocleisis have been considered obsolete and considered associated with a high incidence of de novo stress urinary incontinence. However, in recent years these operations have been reevaluated and are again being performed by gynaecological surgeons.

Figure 1. Requirements for intradetrusor injection of botulinum toxin-A.

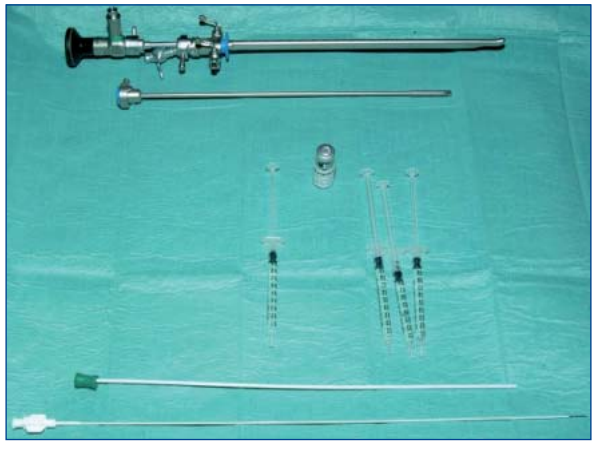


Figure 2. Zuidex system.

The colpocleisis procedure is done through the vagina and essentially closes the vagina on the inside. The patient can no longer engage in sexual intercourse as a result of this. Colpocleisis is an extremely effective operation which:

- Closes the vagina together
- Inhibits a patient from future sexual intercourse
- Has a 90–95% cure rate
- Is performed using local, epidural or spinal anaesthesia
- Has no need for general anaesthesia
- Takes 45 minutes to perform
- Leads to minimal pain or complications.

Colpocleisis is an excellent operation for the treatment of uterine prolapse or complete vaginal vault prolapse for patients who:

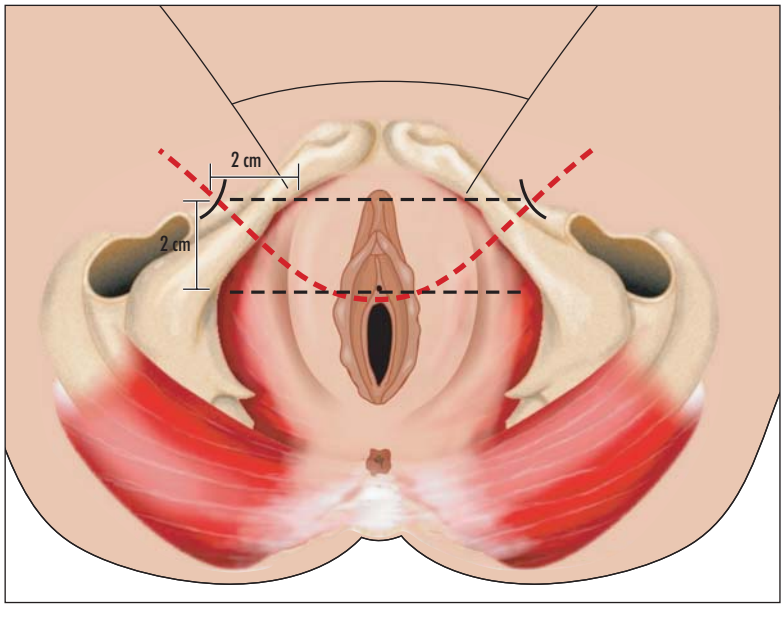
- Are not sexually active
- Have no future plans for sexual activity
- Are medically fragile
- Are elderly.

In a study by Glavind and Kempf (2006) 42 patients were operated by either colpectomy or colpocleisis during which special care was taken not to involve the area beneath the urethra. Patients were evaluated before and 3 months after the operation. No severe complications of the operations were observed. No cases of recurrence of the vault prolapse and no cases of de novo incontinence were observed after 3 months. A telephone interview performed after a mean of 46 months showed satisfaction with the operation in 90% of cases.

Sub-urethral sling procedures for stress urinary incontinence

Stress urinary incontinence is defined as an involuntary leaking of urine upon straining. Various surgical procedures have been described but in modern management of stress urinary incontinence, tension-free sub-urethral sling procedures such as tension-free vaginal tape and tension-free transobturator tape have been effectively used as day care procedures.

Figure 3. Technique of transobturator procedure.



Tension-free vaginal tape: Tension-free vaginal tape was introduced by Ulmsten et al (1996) as an ambulatory surgical procedure under local anaesthesia for treatment of female urinary incontinence. Efficacy of tension-free vaginal tape comparable to established procedure such as colposuspension (Ward and Hilton, 2002) has been well described. Tension-free vaginal tape has been appraised in detail by the National Institute for Clinical Excellence (NICE) (2003). Segal et al (2006), in their retrospective review, reported that tension-free vaginal tape was equally effective in all five subtypes of urodynamic stress incontinence. A study of 129 patients from Finland has assessed the long-term effects and efficacy of tension-free vaginal tape (Kuuva and Nilsson, 2006). This study puts the cure rates assessed by the cough stress test and the pad test at 74% and 81% respectively.

Transobturator tape: Transobturator tape application is based on the same principle of treatment as in tension-free vaginal tape, but with a different surgical approach, i.e. via the obturator foramen instead of the retropubic route (*Figure 3*). NICE, in its interventional procedure overview, finds it 'definitely a novel procedure' (National Institute for Health and Clinical Excellence, 2006). Transobturator tape appears simpler to perform and has a relatively short learning curve. Many trials have compared transobturator tape with tension-free vaginal tape. Mellier et al (2004) reports significantly less surgical complications in the transobturator tape group than in the vaginal tape group. A 1-year follow-up study involving 253 patients from Belgium has quoted a cure rate of 91% with most patients experiencing a significant decrease in incontinence with improved quality of life ($P<0.0001$) (Waltregny et al, 2006).

Conclusions

Ambulatory gynaecology can provide almost equal surgical opportunities to treat the majority of urogynaecological conditions (*Figure 4*). Advantages of an ambulatory or day care approach are enormous to patients, their clinicians and equally to public service providers such as NHS trusts. BJHM

Conflict of interest: none.

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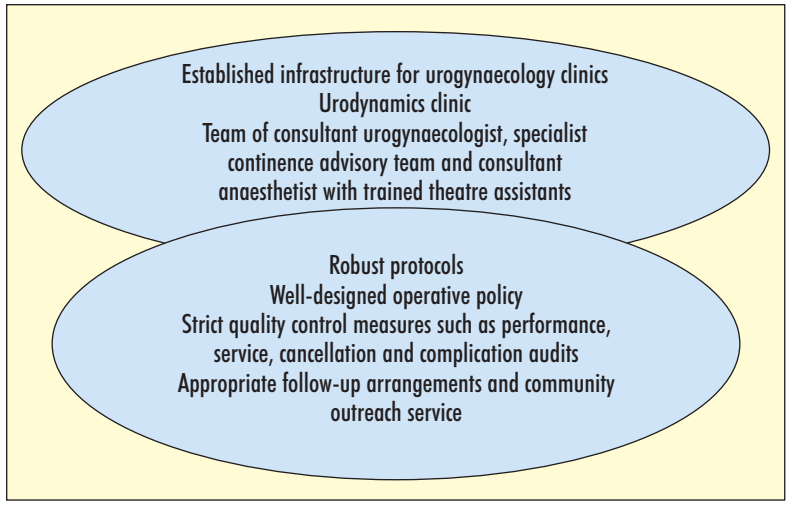
Figure 4. Ideal model for an ambulatory approach in urogynaecology.



KEY POINTS

- Ambulatory surgery offers advantages to both patients and providers.
- Patients can have more choice, convenience, encouragement to recover at home and reduced disappointment following cancellation of a planned operation.
- Many well established urogynaecological procedures such as cystoscopy, vaginal repair and colpocleisis may be performed in an ambulatory setting. Newer procedures, such as injection of botulinum toxin or peri-urethral bulking agents and tension-free tapes for stress incontinence, may also be performed in this way.
- NHS trusts can use beds for major cases and thus reduce waiting lists for elective procedures. The ambulatory approach may reduce rates of hospital-acquired infections. It is also an attractive economical approach for primary care trusts.

Correspondence

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Dr Jack Tinker
Editor-in-Chief, BJHM
c/o Rebecca Linssen
MA Healthcare, St Jude's Church
Dulwich Road,
London SE24 0PB
email: bjhm@markallengroup.com fax: 020 7978 8316