Gynecol Surg (2006) 3: 15–17
DOI 10.1007/s10397-005-0152-2

ORIGINAL ARTICLE

Amanda J. O'Leary · Sanjay K. Vyas

Association between availability of transvaginal ultrasound examination in a general gynaecology clinic with fewer follow-up visits

Published online: 25 November 2005
© Springer-Verlag Berlin/Heidelberg 2005

Abstract To examine the impact of the availability of transvaginal ultrasound examination (TVS) in general gynaecology clinics. Retrospective review of notes. Four general gynaecology clinics, two of which had TVS, and two others that did not. Consecutive women attending general gynaecology clinics in a 1-month time period (March 2002) with a new referral. Outcome from the clinic visit: discharged, added to waiting list for surgery, investigations arranged or further outpatient follow-up. Sixty- two percent of women presenting to the clinic with TVS and 54% of women from the clinic without TVS required a scan from the inclusion criteria. Forty percent of women were discharged at their initial visit and 5% required a follow-up after a TVS clinic. Fifteen percent of women were discharged at their initial visit and 46% required a follow-up in the clinics without TVS. There is a significant reduction in follow-up rates for over 70% of patients seen in general gynaecology clinics if TVS is available at the initial visit.

Keywords Trans-vaginal ultrasound · Follow-up · Significant reduction · Out-patient

Introduction

Transvaginal ultrasound examination (TVS) was introduced in 1986 [1] and it now forms one of the pivotal investigations for a large range of gynaecological symptoms. It has improved our clinical management of postmenopausal bleeding, by providing information about endometrial thickness [2], evaluation of pelvic masses, by identifying their origin and nature [3, 4], menstrual dysfunction, by identifying the presence, position and size of fibroids or intrauterine polyps [5], pelvic pain, by identifying the presence of ovarian pathology [6], and subfertility, by excluding hydrosalpinges and documenting polycystic ovaries [7]. These conditions are predominantly managed in general gynaecology clinics, although some of them have been managed in one-stop clinics [8, 9]. These clinics allow a diagnosis to be made and a management plan to be formulated and discussed at a single visit.

The number of one-stop clinics dealing with the conditions in which TVS makes a significant contribution is unknown. However, our impression is that the majority of women with these symptoms are seen in general gynaecology clinics. If an ultrasound scan is required a referral is made, usually to the radiology department, for a second visit, often followed by a third visit, back to the gynaecology clinic for the result.

Our department does not have any one-stop clinics. Rather, we have general gynaecology clinics where the skills and equipment required for TVS are available, and others where they are not. We report the results of a retrospective review of consecutive women seen in four general gynaecology clinics in our department. Of these, two clinics had the skills and equipment required for a TVS during the visit and the other two clinics did not. Referral to each clinic is dependent upon the woman's home address, rather than her presenting complaint, so the clinic populations are similar.

Materials and methods

Our department provides gynaecology outpatient services on two sites. There are general gynaecology clinics on one site twice a week and 5 times a week on the other. These seven clinics are our general gynaecology clinics and women are referred by their general practitioners. Of these, two clinics had an ultrasound machine and staff trained to use it present in the clinic and two clinics, on a separate site, did not have access to an ultrasound scan during the clinic visit. The remaining five clinics have an ultrasound machine available in the clinic, but variable degrees of skill in performing TVS. They were therefore excluded from this review, leaving a comparison between two clinics with a machine and skills and two other clinics that had neither a

A. J. O'Leary (✉) · S. K. Vyas
Department of Women's Health, Southmead Hospital,
Westbury-on-Trym,
Bristol, BS10 5NB, UK
e-mail: amandajoleary@hotmail.com
Tel.: +44-777-9115737

machine nor skills to perform TVS. We have designated these as clinics with TVS and clinics without TVS.

We reviewed the notes of consecutive new patients attending all four of these general gynaecology clinics over a 1-month period. The notes were retrieved and examined for the indication for referral and the outcome from the clinic visit (discharged, added to waiting list for surgery, investigations arranged or further outpatient follow-up).

We defined the following symptoms as requiring TVS as part of the initial management in the assessment of the woman:

i. Postmenopausal bleeding
ii. Menstrual dysfunction
iii. Presence of a pelvic mass
iv. Pelvic pain
v. Subfertility

We also recorded the number and seniority of medical staff assigned to each clinic and defined the index month as being 18 months earlier (March 2002) to allow an opportunity for all follow-up visits to the clinics to be completed.

Results

Staffing levels in the two types of clinics were similar. The clinics with TVS had a senior house officer, a specialist registrar, a research fellow (in training in TVS) and a consultant. The consultant in the clinic oversaw any scans performed. The clinics without TVS had a senior house officer, a specialist registrar, a clinical assistant (of over 15 years experience) and a consultant.

The clinics with TVS saw a total of 125 consecutive new patients and the clinics without TVS saw a total of 140 consecutive new patients during the index month. All these notes were retrieved and the features mentioned above were extracted and recorded on to a pro forma.

There was no statistical difference between the number of women presenting with the complaints mentioned above in each type of clinic (Table 1; Chi-squared test, $P>0.01$ in all cases).

Table 1 Number of women (% of total referrals) presenting to the clinics with the inclusion criteria

Presenting complaint	TVS clinic, no. of women (% of referrals)	Non-TVS clinic, no. of women (% of referrals)
Postmenopausal bleeding	21 (17)	22 (16)
Menstrual dysfunction	31 (25)	34 (24)
Presence of a pelvic mass	2 (1.6)	3 (2)
Pelvic pain	21 (17)	13 (9)
Subfertility	3 (2)	3 (2)

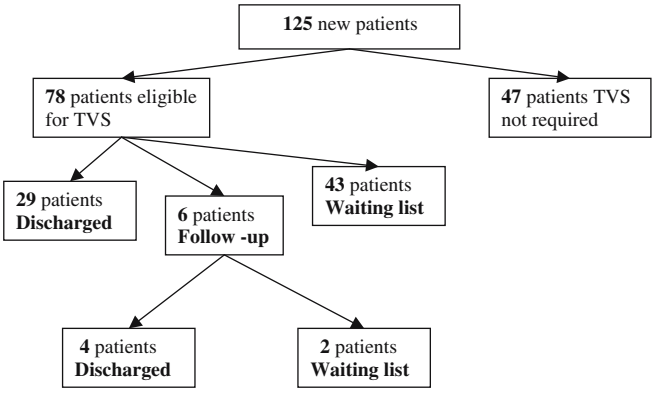

Fig. 1 Outcome of patients attending general gynaecology clinics with TVS facilities

Clinics with TVS

Seventy-eight women (62% of all referrals) required an ultrasound assessment in their initial management using the criteria stated earlier (see Fig. 1). Of these, all 78 women (100%) underwent an ultrasound scan during their first visit to the clinic. The median age of these women was 43 years (inter-quartile range 37–52 years). Twenty-nine women (40%) were discharged at their first visit and 43 (55%) were added to the waiting list for an operative procedure. Six women (5%) were brought back for follow-up. Two of these women were for repeat scans where ovarian cysts had been identified and they were both added to the waiting list after the follow-up visit as their cysts had persisted (Fig. 1).

Clinics without TVS

Seventy-five women (54%) required an ultrasound assessment as part of their initial investigation as defined by the inclusion criteria (see Fig. 2). Of these, 53 women had an ultrasound scan as part of their initial management. Ten of these women had had a TVS before clinic as arranged by their general practitioners, and the other 43 women were referred for TVS after being seen in the clinic. Therefore,

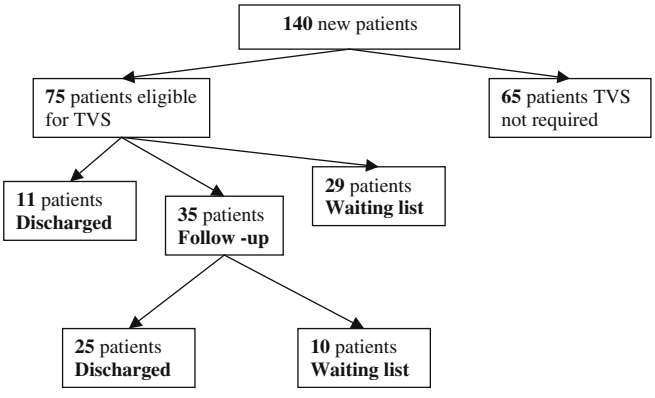

Fig. 2 Outcomes of patients attending general gynaecology clinics with no TVS facilities

71% of women whose initial complaint met the inclusion criteria for an ultrasound scan as part of their initial assessment underwent one. The median age of these women was 46 years (inter-quartile range 39–54 years) (Fig. 2).

Eleven women (15%) were discharged at their first visit and 29 women (39%) were added to the waiting list for an operative procedure, after their initial consultation. Thirty-five women (46%) required follow-up either in the form of repeat outpatient clinic review (70%) or a letter discussing future management of either discharge or being added to the waiting list (30%).

Discussion

It could be argued that the clinics where TVS is available are staffed by enthusiasts, who may overstate its necessity and so scan all women who present with the conditions where we believe TVS has a role. However, the fact that TVS is a pivotal examination is demonstrated by the fact that it was undertaken in 71% of cases even in the clinics that did not have TVS facilities available. We are unable to estimate how much higher this figure would be if TVS facilities were available in these clinics.

If the skills and equipment required for TVS are available in a general gynaecology clinic, 40% (n=29) of women were reassured and discharged after their first consultation, compared with 15% (n=11) in a clinic without TVS. Overall, the numbers of women added to the waiting lists in both types of clinics were comparable [36% (n=45) in the clinics with TVS, and 28% (n=39) from the clinics without TVS]. However, in the clinics without TVS only 74% of these cases were added to the waiting list after their initial consultation, whereas almost all those women who required surgery were identified at the first visit in clinics with TVS. More women were added to the waiting list in the clinics with TVS, as these clinics had more referrals with women complaining of pelvic pain than those clinics without TVS (17% and 9%, respectively), who wished to have a diagnostic laparoscopy, even in the presence of a normal scan finding.

This is reflected in the follow-up rates. Five percent of women were followed up from the clinics where TVS was available, compared with 46% of women from the clinics where TVS was not available. This follow-up took the form of a physical visit to the clinic, or a letter. Both interventions require time and resource. In summary, the flow of patients to surgery or discharge is similar in both types of clinics. What is different is the number of interventions required in addition to the first visit. In our study, the clinics without TVS required 35 further points of patient contact (visit or letter) for the 75 new patients whose management required an initial ultrasound examination as defined by the inclusion criteria as defined in the introduction. Avoiding these additional contacts would result in a considerable freeing up of appointments in general gynaecology clinics, as well as savings in secretarial, medical records and other costs. These potential saving needs to be balanced against the fact that the clinics without TVS saw 15 (12%) more new patients than the clinics with TVS, despite similar staffing levels.

A single clinic visit which provides a diagnosis followed by reassurance or a plan of further management may also be better for women as the waiting time for further investigations and the attendant anxiety could be reduced. A formal assessment of satisfaction with this integrated approach needs to be formally assessed.

References

1. Booker M (1998) A growing role for ultrasound. Practioner 247:297–299
2. Tabor A, Watt HC, Wald NJ (2002) Endometrial thickness as a test for endometrial cancer in women with postmenopausal vaginal bleeding. Obstet Gynecol 99(4):663–670
3. Jain KA, Friedman DL, Pettinger TW et al (1993) Adnexal masses: comparison of specificity of endovaginal ultrasound and pelvic MR imaging. Radiology 186:697–704
4. Timmerman D, Schwarzler P, Collins WP et al (1999) Subjective assessment of adnexal masses using ultrasonography: analysis of variability and experience. Ultrasound Obstet Gynecol 13:11–16
5. Nalaboff KM (2001) Imaging the endometrium: disease and normal variants. Radiographics 21(6):1409–1424
6. Graif M, Shalev J, Strauss S et al (1994) Torsion of the ovary: sonographic features. Am J Roentgenol 143:1331–1334
7. Derchi LE, Serafini G, Gandolfo N et al (2001) Ultrasound in gynaecology. Eur Radiol 11:2137–2155
8. Mohamed H, Nair P (2003) One-stop clinic for postmenopausal bleeding at district general hospital: does it have a role? J Obstet Gynaecol 23(2):182–184
9. Abu JI, Habiba MA, Baker R et al (2001) Quantitative and qualitative assessment of women's experience of a one-stop menstrual clinic in comparison with traditional gynaecology clinics. Br J Obstet Gynaecol 108(9):993–999