

Prophylactic oophorectomy in Northern Ireland

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SUMMARY

A postal questionnaire was sent to all gynaecological consultants and senior registrars (n = 50) in Northern Ireland to establish the prevalence of prophylactic oophorectomy. Forty three (84%) replied. 72% performed prophylactic oophorectomy (28% unilateral), 28% did not. With reference to the world literature, there appears to be no benefit from the unilateral procedure but a consensus that bilateral oophorectomy is an option which should be considered in certain cases where there is a high risk of ovarian cancer.

INTRODUCTION

Each year in Northern Ireland there are 150 new cases of ovarian carcinoma.¹ This is the fifth commonest cause of cancer-related death in Northern Ireland, with approximately 90 deaths per year. Ovarian carcinoma is responsible for 4–5% of deaths in females below the age of 60,² and the death rate from ovarian carcinoma exceeds that of the cervix and the uterine corpus combined.

This cancer presents late, in less than 30% of cases being confined to the ovaries at the time of diagnosis. Unlike the cervix and breast, the ovary is a hidden organ which does not lend itself to simple examination, so late presentation with advanced disease and poor prognosis is the rule. Early diagnosis can be improved by screening all women, or at-risk populations. Cervical smears and clinical pelvic examination are insensitive screening investigations. Tumour markers such as Ca-125 could provide a useful screening technique but have not yet been proved to be effective.³ Abdominal ultrasound^{4, 5} and transvaginal colour flow imaging⁶ are being evaluated and may prove to be effective screening tools in the future.

Traditional treatments are at best poor, with a five year survival of less than 25% and newer therapies such as monoclonal antibody directed chemotherapy and radiotherapy are still largely experimental. For many years it has been suggested that the incidence of ovarian cancer could be reduced if prophylactic oophorectomy was performed on women undergoing pelvic surgery. Many factors must be considered including the patient's age, menopausal status, presence of carcinogenic risk factors and contraindications to hormone replacement therapy. The procedure of prophylactic oophorectomy is therefore a delicate balance between the risk of developing ovarian cancer and the consequences of removing

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normal ovaries. This study was undertaken to establish the current practice of prophylactic oophorectomy in Northern Ireland.

METHODS

In Northern Ireland there are seventeen hospitals which perform gynaecological surgery. A postal questionnaire was sent to all consultant gynaecologists ($n = 42$) and gynaecological senior registrars ($n = 8$). In order to encourage the response rate, replies were anonymous and postage was prepaid. This study was carried out during a six week period of 1988.

RESULTS

Forty three (84%) replies were received and the results are summarised in the Table. Prophylactic oophorectomy during hysterectomy was performed at some time by up to 72% of gynaecologists. Their practice was dependent on the patient's age and menopausal status, with a natural transition appearing between the ages of 40 and 45. Unilateral prophylactic oophorectomy was carried out by 28% of the sample and was generally performed when the patient was aged between 40 and 45 years.

A second group of surgeons (26%) never removed normal ovaries as a prophylactic procedure during hysterectomy.

If prophylactic oophorectomy was performed before the menopause 12 (57%) prescribed hormone replacement therapy, whereas 7 (33%) prescribed this only if the patient became symptomatic. Two surgeons (10%) used oestradiol implants at the time of surgery.

TABLE

Prophylactic oophorectomy questionnaire: (43 replies from 50 gynaecologists circulated in Northern Ireland)

Question	Answer — yes	
	n	%
<i>Bilateral prophylactic oophorectomy?</i>		
Post-menopausal	31	72%
Pre-menopausal		
Age > 50	20	48%
Age > 45	12	28%
Age > 40	2	5%
Age ≤ 40	0	—
<i>Never remove normal ovaries?</i>	12	28%
<i>Unilateral prophylactic oophorectomy?</i>	12	28%

DISCUSSION

One of the most frequent yet still controversial decisions to be made when performing a hysterectomy is whether to remove or retain the normal ovaries. This decision is often made using subjective prejudices, perhaps during the

surgical procedure itself. From this study it appears that there is wide variation in attitudes to prophylactic oophorectomy, a finding which is not unique to Northern Ireland.⁷ A review of the literature indicates that the need for prophylactic oophorectomy has been questioned many times, with no clear answer.⁸

How many patients with retained ovaries actually develop carcinoma of the ovary? Jacobs and Oram⁹ recently reviewed twelve studies in which the average incidence of cancer in retained ovaries, after surgery for benign gynaecological disease, was 0·2%. This seems a very small and quite acceptable figure. However, all of these studies suffer from the fact that long term (greater than 10 years) follow-up is difficult due to population mobility, and a woman may die from an unrelated disease and an ovarian tumour remain undiscovered. The second approach is to examine how many patients with ovarian carcinoma have undergone previous pelvic surgery where prophylactic oophorectomy could have been performed. Studies of this question give figures ranging from 4·5%¹⁰ to 14%,¹¹ an average figure from twelve studies is 10%.

In practical terms, if prophylactic oophorectomy were performed as a routine at pelvic surgery approximately 400 lives would be saved in England and Wales, where over 4000 women die each year, and at least nine per year would be saved in Northern Ireland. Prophylactic oophorectomy would also eradicate benign ovarian disease, pain from residual ovarian syndrome and would reduce the morbidity associated with further surgery.¹²

If functioning ovarian tissue is removed, then hormone replacement therapy is indicated. Premature removal of ovarian steroids may or may not be adequately replaced by current replacement therapy, but if there are no contraindications it is now largely accepted that the psychological, cardiovascular and musculoskeletal benefits of such therapy outweigh the risks.¹³ The ovarian stroma retains some function after the menopause but there is only a small endocrine contribution. Prophylactic removal of post-menopausal ovaries should therefore not cause any endocrine problems as most post-menopausal oestrogen comes from peripheral conversion of adrenal androgen.

The aetiology of ovarian cancer remains unknown but it occurs in association with an early menarche, late menopause, previous mumps infection and pelvic irradiation. One of the most convincing theories was postulated in 1972 by Fathallah¹⁴ who suggested that the trauma of incessant ovulation may predispose to the development of cancer. Ovulation suppression by pregnancy, lactation and oral contraceptive use may therefore be protective, but the prophylactic removal of just one ovary in the pre-menopausal woman would lead to a relative increase in ovulation in the remaining ovary which might possibly increase the neoplastic risk.¹⁵

Opponents of prophylactic oophorectomy suggest that, using these arguments, general surgeons should perform prophylactic mastectomy to reduce breast carcinoma and remove testicles at the time of inguinal hernia repair. In reply, it should be remembered that the ovary is a hidden organ, in which cancer is more comparable to that of the pancreas than to cancer of the breast or testis.

In the absence of better diagnostic and therapeutic procedures for ovarian disorders, I would suggest that prophylactic oophorectomy be used to reduce

both benign and malignant ovarian disease. It should be considered by all those operating in the female pelvis and should be planned prior to surgery with the patient partaking in the decision-making process. Current gynaecological practice in Northern Ireland shows that a majority of surgeons consider that ovaries should be removed during any pelvic surgery after the menopause and that in the pre-menopausal patient over the age of 40, prophylactic oophorectomy is an option which must be considered, especially if there is a strong family history of ovarian cancer or there are other high-risk features. Regarding the practice of unilateral prophylactic oophorectomy, review of the literature reveals no benefit from performing such a procedure and in theory it may even be detrimental.

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