Vasectomy and testicular cancer

Sir, - I agree with Dr A J Cale and colleagues that the possibility of vasectomy affecting testicular malignancy is important in view of the current trend towards male sterilisation. I disagree, however, that a large prospective study is the best approach at this juncture.

The finding of a significantly higher standardised incidence ratio of testicular tumour for men who had a vasectomy and the short average interval (1-9 years) between vasectomy and malignancy have led Dr Cale and colleagues to suspect "an association" and that "vasectomy accelerates the tumour." Studies on the relation between vasectomy and testicular cancer have been few and the findings tenuous. Vasectomy was not considered a potential risk factor in a review of the epidemiology of testicular cancer published in 1989; and Moss et al did not find an association between vasectomy and testicular cancer among American men aged 18-40. A case-control analysis performed specifically to test this hypothesis did find an association, but it was restricted entirely to Catholic men. The investigators suspected that the finding may have been spurious owing to selective underreporting of vasectomy among the Catholic controls. The finding by Dr Cale and colleagues of an excess of observed number of cases in only the 30-35 age group presents a problem similarly deserving an explanation. An association in time between two variables can be due to many reasons. More convincing evidence is needed before an expensive, logistically difficult, and time consuming prospective approach is to be undertaken.

The incidence of testicular cancer is very low (5.6 per 100,000 white men aged 20-69 in the United States). As Strader et al pointed out, even if data of four previous large multicentre studies involving 114,000 men (with an average follow-up period of five years) were pooled for analysis the study power would only be 0.2 (for the detection of a twofold increase of the risk of testicular cancer at the 0.05 level of significance). It is doubtful that one large cohort study could, in fact, produce definitive results to confirm or negate the putative association.

The sample size needed to achieve the desired study power in a case-control study is determined by the prevalence of vasectomy rather than by the incidence of testicular cancer. In a number of countries, including the United Kingdom, about 10% of couples of reproductive age rely on vasectomy for contraception. With this prevalence, a case-control study will need 221 pairs to detect a twofold increased risk for α=0.10 (two sided) and β=0.20. Only 78 pairs are needed to detect a threefold difference in relative risks for same study power. The prevalence of vasectomy should be higher in big cities where more hospitals are located, and thus fewer testicular cancer patients will be needed. If, in practice, the needed number of cases cannot be reached in a reasonable period of time then multicentre study, retrospective case finding, and increasing the number of controls relative to cases offer solutions. Little suspicion of such an association is entertained by the general population and the exposure variable (vasectomy) is an event not easily forgotten by the study subjects. Both these aspects will help avoid the bias due to selective recall and memory decay, and they will add validity to this much less costly and more easily manageable approach, which produces results more quickly. I believe that the case-control approach is the method of choice.

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