Open-ended vasectomy – the new gold standard?

John O’Keeffe traces the development of vasectomy procedures and outlines the steps involved in open-ended vasectomy

VASECTOMY IS A PROCEDURE with a 100-year history, and like any other operation has been modified over time. The two major changes in operating technique to date were the introduction of local anaesthetic, roughly fifty years ago, and the use of the Hyfrecator device, about twenty-five years later. Vasectomy was now manageable in a GP setting, and the Hyfrecator removed the need for internal stitches, and their associated problems.

New developments
Since 1990 there have been two other developments, not of the same magnitude but important enough in their own right. These have been:
• ‘No scalpel’ vasectomy
• Open-ended vasectomy.

‘No scalpel’ vasectomy
The no-scalpel vasectomy modification was developed in China in the mid-1970s and introduced to the US in the early 1990s. However, it has really only become popular in the last ten years.

The technique differs from conventional technique in that conventionally a tiny incision is made in the scrotal skin before the vas is grasped by the vas forceps. With this new technique the vas is gripped through the skin with a modified forceps, and only then is the skin incised, either with another specially-developed forceps, or with the Hyfrecator needle. The rest of the procedure is as before.

This procedure is claimed to have a lower incidence of discomfort and bruising than use of a scalpel, but not everybody is convinced. I myself attended a formal training for this procedure in England, and while I could fully appreciate some of the possible advantages, there were for me two significant disadvantages.

All the men who had the operations that I saw were given a benzodiazepine sedative pre-operatively, which meant that all were unable to drive themselves home, something that most men having conventional vasectomy can do.

Using the Hyfrecator, instead of a scalpel, to incise the skin results in a considerable amount of smoke and a burning smell. This necessitates the use of a large smoke extractor – one more piece of equipment that I can do without.

For these reasons both Andrew Rynne – the guru of Irish vasectomy – and I, could find little advantage to this technique. Others may disagree. The only advantage that we do see is the impression that ‘no scalpel’ means ‘no cut,’ which is patently incorrect, but is heavily promoted by its supporters as being the advantage.

Open-ended vasectomy
Conventionally with vasectomy, a section of vas is removed, and both open ends are blocked by whatever technique is favoured by the surgeon. Blocking the testicular end leads to an inevitable increase in back pressure down the vas and into the epididymis. This back pressure has been conclusively proven in animal studies, where histological examination has shown enlargement and congestion of epididymal tissue after closed-ended vasectomy. This is of little clinical significance in most men, but is probably the cause of the only common post-operation problem, that of congestive epididymitis.

This happens to approximately 1% of men who have vasectomy, and usually occurs sometime in the two years after the operation, when the man notices a sudden unilateral scrotal pain, for no apparent reason. On examination there will be tenderness, sometimes marked, and enlargement of the epididymis on the affected side. Treatment is usually effective, and consists of a short course of high-dose NSAID. Most of the time that is all that is needed, but it can occasionally recur.

With open-ended vasectomy, only the prostatic end of the cut vas is blocked. The testicular end is permanently left open, but is buried in a different tissue plane. There is no resulting back pressure, and epididymitis should theoretically not occur. This has been proven in US studies. However, the main worry was a possible reduction in contraceptive reliability. Thankfully, this has not been shown to be so in three large studies.

The technique was developed in Australia in the 1980s, when a purse-string suture was used to close the cut testicular end into the vas sheath. This necessitated the presence of an operative assistant, and occasionally resulted in rejection of the suture. In the late 1990s American urologists began to use a titanium clip to close the sheath, and this has now become the method of choice.

Advantages of open-ended vasectomy
No matter which method is used to isolate the vas, the open-ended technique can be used.
• It is just as reliable as traditional closed-ended vasectomy
• Post-operative pain and discomfort is much reduced
• Technically, it is easier.

Technique of open-ended vasectomy
As with conventional vasectomy, the scrotal skin and vas sheath are anaesthetised, in my case with 2% plain lignocaine. I inject both sides one after the other, returning then to the first side. I myself prefer to use two incisions, while...
others prefer a single incision. The steps in an open-ended vasectomy are shown in Figures 1-10. The procedure is shown for one side of the testes, but the same procedure is repeated on the other side. Only a light gauze dressing is used for the skin.

Summary
I have been using this technique since the beginning of the year, and consider it a far better technique than that previously used. The advantages that I see are:

With the open-ended technique post-operation pain and discomfort are now a rarity.
Injecting both sides consecutively before incision greatly reduces any discomfort.
Skin sutures are not only unnecessary but also problematic, and since I stopped using them I have had no post-op wound problems – an occasional occurrence before.

John O’Keeffe is in practice in Donnybrook, Dublin.