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EDITORIAL

Clinical Research in Thromboembolism: What is Important for the Urologist?

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A fatal pulmonary embolus occurs in about 0.1% to 1% of patients after a surgical procedure; death is sudden and unexpected. Non-fatal pulmonary emboli are at least three times more common; they delay convalescence, cause great concern and the treatment is still empirical (1).

In the last 10 years it has become evident that most of these pulmonary emboli originate in the leg veins and that the incidence of deep vein thrombosis (DVT) is about 30% of all patients over the age of forty undergoing general surgical procedures. This very high figure has still not been generally accepted despite the strong supporting evidence. Most urologists will say "we do not see so many thrombotic complications in our patients". The general surgeons do not see them either. Thrombi commonly occur during operation and can be detected and monitored by the ^{125}I fibrinogen test. They can also be demonstrated by phlebography. Thrombi start in the soleal veins and three events may follow: they may remain small and localised, probably about two thirds do so and never spread or threaten life or limb. Others increase in size until they reach a large vein where they may involve vein cusps and make them incompetent for later life - the post-thrombotic syndrome. A few thrombi continue to extend proximally as new thrombus is added; sometimes they become attached to the vein wall at a higher level, but more often they lie free in the blood stream - a constant source of danger until the whole vein becomes occluded and the thrombus becomes organised and recanalised (4).

What are the facts concerning prophylaxis? Much has been written but from recent reviews it is evident that the methods available still require further assessment (1, 3, 4). It is now generally agreed that only small doses of subcutaneous heparin (3 x 5,000 iu daily starting before operation) or intra- and post-operative intravenous dextran infusions are able to reduce the number of fatal pulmonary emboli after elective general surgery.

Coumarins have been used for more than 30 years and are effective in orthopaedic surgery, but there are no good data supporting their use in other fields of surgery. They are inconvenient to both patient and physician, and are unlikely to be popular with most surgeons. On the other hand, small doses of heparin are probably not sufficiently effective in hip surgery whereas dextran has been shown to be of value with these procedures.

What is the relevance of these findings to the urologist? First they show that the attitude towards thrombo-embolic complications differs between surgical specialities. Secondly, recent studies have revealed that the incidence of thrombo-embolic complications in various fields may differ from what the textbooks tell us. The incidence of DVT in gynaecological surgery (about 20%) is not as high as most people would assume. Why? Perhaps it is because of the relatively low age group of the patients for age is certainly one of the most important risk factors regarding thrombo-embolic complications.

What are urologists doing in respect of this problem? Patients undergoing prostatectomy have been studied in several well controlled trials. In studies involving about 500 patients undergoing open prostatectomy, data based on fibrinogen tests and phlebograms, show a 50% incidence of post-operative DVT. In about 200 patients undergoing transurethral resection of the prostate without prophylactic measures, the incidence of DVT was 10% (3, 7, 8). In our own study of 47 patients without prevention the incidence was as low as 4% (2, 8). The incidence of DVT in general urological patients is probably about the same as in general surgical patients - approximately 30% (8).

What can be said regarding various preventive methods? Why not institute prevention only in those who are at high risk? The answer is that we do not know who is at high risk; there is much suspicion and speculation but no hard data. It is generally agreed that only preven-

tive methods which are easy to apply will be used and that if they are given to all patients then the number of thrombo-embolic complications will be reduced. Only two methods fulfil these conditions; Dextran 70 and subcutaneous heparin. Other recommended measures, both physical (intermittent compression or electrical stimulation of the calf) as well as drugs (e. g. anti-platelet substances) are still under clinical investigation and have not been proven to be effective in reducing fatal pulmonary emboli which is not necessarily the same as reducing the incidence of DVT. Again, in contrast to popular belief, early ambulation, physiotherapy and elastic bandages or stockings alone have never been shown to reduce the number of fatal pulmonary emboli.

From currently available data it seems reasonable to give all adult patients undergoing urological procedures either dextran or subcutaneous heparin. There should be no discussion about open prostatectomies; all of these patients must receive preventive therapy against thrombo-embolic complications. The need for prophylaxis for a transurethral resection of the prostate is more debatable; even though the incidence of DVT is small, there is no doubt that some of these patients are dying from fatal pulmonary embolism (5, 6).

Should prophylaxis be used to save but a few? It is our opinion that we should use prophylactic methods which have been shown to be effective, have few side effects, are cheap and can be applied routinely in all patients. Whether one uses small doses of heparin or dextran infusion is a matter of taste, but it is important that one of these should be used.

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