

Reducing the risk of e-thrombosis

E-thrombosis is a new term, coined by a group of doctors in New Zealand led by Prof Richard Beasley, for the association between prolonged sitting working on a PC and the development of **deep vein thrombosis** (DVT) and then **pulmonary embolism**.

DVT is due to blood clots in the deep veins of the legs and can involve the calf and also thigh veins. Once a clot had entered the thigh, there is about a 10% chance of the clot breaking off and travelling up into the right side of the heart and then through into the lung artery, where it will block the blood flow to the lungs. A large pulmonary embolism can block the entire blood supply to the lungs and thus is fatal. A smaller one can cause breathlessness and pain and even coughing up blood.

The association between prolonged sitting and deep vein thrombosis was first recognised in London during the blitz in World War II, when many people slept overnight in deck chairs. The added pressure of the wooden rung of the deck chair pressing on the back of the leg probably contributed. Travellers' thrombosis is also due to prolonged immobility and indeed is more common in very tall and short individuals as well as those with other risk factors such as using the combined oral contraceptive pill, or travelling when unwell. Professor Beasley has also used the term "seated immobility syndrome" to cover e-thrombosis, travellers thrombosis and other conditions where immobility causes DVT. A recent study showed that just sitting immobile for an hour and a half reduces the blood flow in the popliteal vein (behind the knee) by 40%. This would predispose to DVT.

The first case of e-thrombosis described by Prof Beasley's group was in a 32 year old man who developed a DVT and pulmonary embolism after sitting at for prolonged periods at work and at home in front of his PC. He regularly sat for 12 hours and sometimes for 18 hours; sometimes he did not get up and move around for 6 hours at a time. There has also been a fatality in a man who spent 72 hours in an internet café on a PC playing games.

The incidence of e-thrombosis is not known, but may be quite substantial in view of the widespread use of computers at work and at home. In the U.S. in 2005 half of all employees use a PC at work and half had a PC at home, with increasing access to the Internet.

It would seem prudent that if you spend long periods on a PC that regular foot and leg exercises are taken and regular exercise breaks are taken away from the PC. It is also important to stay well hydrated with regular drinks, as dehydration is another risk factor for DVT.

References

Beasley R et al. eThrombosis: the 21st Century variant of venous thromboembolism associated with immobility. *Eur Resp J* 2003; 21: 374-376.