Joint Replacement Surgery Can Increase Blood Clot Risks

When tennis star Serena Williams underwent emergency treatment for a pulmonary embolism earlier this year, the world's attention was drawn to this often fatal medical condition which, although surprisingly not uncommon, is unfamiliar to many. A common risk factor associated with clot development is surgery; particularly hip and knee replacement surgery.

A new study focusing on the occurrence of clots in knee replacement patients and published in a recent issue of the *Journal of Bone and Joint Surgery (JBJS)* indicates that despite treatment with blood thinners prior to and immediately following joint replacement surgery, the risk of clot formation is still relatively high in certain patients. "The rate of knee replacement has increased substantially worldwide, and continued increases are anticipated in the future," said study author Alma Pedersen, MD, PhD. "The formation of clots, including pulmonary emboli, is a serious complication in patients undergoing knee arthroplasty. Prophylactic measures, such as the use of blood thinners around the time of surgery, are used to reduce the occurrence of clots, but their effectiveness in routine clinical practice following surgery is more uncertain."

The authors evaluated knee replacement patients who had surgery between 1997 and 2007, looking for evidence of post-surgical embolism in the 90-day period following surgery. The authors found that 1.2 percent were hospitalized for blood clots during the 90-day period following knee surgery. An in-depth evaluation of these patient records revealed the following risk factors associated with clot development:

- Advanced age (older than 80 years of age).
- History of cardiovascular disease.
- History of a previous clot.
- Increased number of accompanying medical conditions.

The study also revealed the number of patients admitted to hospitals with clots following knee surgery has increased since 1997, which Dr. Pedersen noted is most likely due to advances in diagnosis which have enabled physicians to identify clots before they cause serious problems. The study also notes that individuals who have a knee replacement surgery due to rheumatoid arthritis have a lower risk of clots than those with other conditions. However, in all patients, the risk can be diminished slightly by replacing only one knee at a time, rather than both.

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