Patients having hip replacement surgery can in rare cases develop bone cement implantation syndrome (BCIS). In 5 out of 6 reports of the syndrome received by the Pennsylvania Patient Safety Authority, the patient died from cardiac arrest associated with the implantation of the new prosthesis.

Though use of cement for hip replacements decreased from 66% in 1995 to 39% in 2001, the authority says it believes the issue warrants attention.

**Patients at risk**

Elderly patients with underlying heart disease who need surgery for a hip fracture using bone cement are most at risk. Also at risk are patients who have severe osteoporosis and patients who have fixed heart rates with pacemakers.

“The cases we’ve seen through the reporting system involve patients who were having hip replacement surgery done using bone cement,” says John Clarke, MD, clinical director of the state’s patient safety reporting system.

The syndrome is actually caused by the seal and pressure that develops when the hip prosthesis is inserted after the cement has been placed, not by the cement itself, Dr. Clarke explains, noting other materials could also cause the same seal and pressure.

**Warning signs**

Some warning signs that occur within minutes of using the bone cement include:

- low blood pressure
- fluid in the lungs
- increased airway resistance
- irregular heartbeat
- hypothermia
- increased bleeding.

Also in the authority’s December 2006 newsletter are articles about perforations of the colon during colonoscopy, methods for confirming feeding tube placement, and dangers associated with heparin therapy.

The authority is an independent state agency created in 2002 to help address health care errors by identifying problems and recommending solutions that promote patient safety. Health care facilities are required to report serious events to the authority.

The authority says it has received more than 430,000 reports since 2004, of which 96% are near misses. The authority publishes quarterly and supplementary advisories to make facilities aware of steps they can take to reduce errors and avoid patient harm.