Intraoperative soft tissue preservation: One strategy may prevent HO

The total hip arthroplasty surgical technique may be the most important factor to reduce heterotopic ossification risk, according to a presenter.

Orthopaedics Today Europe, April 2016

ORLANDO, Fla., USA — Use of a posterior approach and a surgical technique that preserves soft tissue may help prevent the development of heterotopic ossification after total hip arthroplasty, according to an orthopaedic surgeon from Belgium.

In a presentation at the Current Concepts in Joint Replacement Winter Meeting, Koen De Smet, MD, said more than 60% of patients who underwent total hip arthroplasty (THA) without some kind of prophylaxis to prevent the development of heterotopic ossification (HO) will later present with HO. Therefore, he said surgeons should be proactive and prevent HO, rather than wait for a negative bone scan before they must perform a resection on a patient with grade 2 or grade 3 HO.

“You need good surgery and you have to be nice to soft tissue. It is important that you have a clean approach to [surgery]. Sometimes I have to tell my assistant do not retract like you are doing a veterinary surgery. You need to try to do a bloodless surgery. That is important. Be nice to the soft tissues. Also, try to get no bone debris in the muscles or soft tissue,” De Smet said.

Prophylaxis is promising

Three factors can lead to the formation of HO: osteopotent cells, a niche or space that allows HO to form, or an inflammatory insult, according to De Smet.

Chemical prevention, anti-inflammatory medications and prophylactic radiation therapy have all shown some promise in the reduction of HO, but De Smet said their effects may be mild or moderate. Furthermore, chemical prophylaxis used in elderly patients has been shown to increase the rate of adverse events. Radiation therapy also can increase the risk of soft tissue sarcoma, he said.

Surgical treatment can be effective, De Smet said, but it is important that surgeons know when to take a proactive approach in order to maximize its success.

“When should you do surgical treatment? If you have no functional impairment or full range of motion, you should not be doing anything. If you have to do surgical treatment, do not wait for a negative bone scan. You should do early resection in grade 3 and 4 between 6 [months] and 12 months. Do not wait for a full 3 years for a negative bone scan. That is important,” he said.

Limit formation
De Smet said data suggest orthopaedic surgeons can help reduce HO formation by limiting the length of the incisions they make, as well as the duration of the surgery. Patients with HO can benefit most when the HO is resected early and when there is an effective postoperative strategy to prevent its recurrence, he said.

“The most important factor is prevention with a good surgical technique” that is gentle on the soft tissues, De Smet said. – by Robert Linnehan

Reference:
De Smet K. Paper #121. Presented at: Current Concepts in Joint Replacement Winter Meeting; Dec. 9-12, 2015; Orlando, Fla., USA.

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Disclosure: De Smet reports he receives royalties from MicroPort Orthopedics for the Conserve Plus BioFoam cup.