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Chronic concern over an acute phase reactant

Story from the Front Lines

A 59 year-old man with a history of shoulder and knee pain presented to clinic with six years of left osteoarthritic hip pain. His pain has been progressive and now requires the use of a cane for support. Radiologic studies have shown a loss of joint space with thinning of the upper aspect of the left hip joint with bone-on-bone appearance and subchondral cyst formation. The femoral head articular contour shows flattening and severe atrophy on X-ray. He has no history of prior joint replacement or cardiovascular disease. Referral to orthopaedic surgery was placed where he was deemed an appropriate candidate and scheduled for total hip arthroplasty (THA). The THA was subsequently cancelled when pre-operative screening labs revealed an elevated c-reactive protein (CRP) level of 11.6 mg/L. Despite feeling well and no evident disease process to explain this abnormality, serial CRP studies were obtained subsequently and all were in excess of the specified pre-surgical criteria of less than 2.9 mg/L. Meanwhile, the patient has reluctantly begun taking hydrocodone/acetaminophen and etodolac for pain control. His surgery has not been rescheduled.

Teachable Moment

CRP is an acute phase reactant that can be detected early in a disease process before other symptoms begin to appear. It is often used to monitor disease activity or detect an inflammatory process due to its rapid decline with resolution of inflammation.¹ It is produced by the liver in response to interleukin-6 and inflammatory cytokines and activates the classical complement cascade after binding to a variety of possible ligands. Rising CRP concentration, however, is not specific and can be seen with trauma, infection, inflammation, tissue infarction or malignancy.²

While CRP levels are sometimes measured as part of preoperative evaluation for elective surgery, this practice is not supported by existing evidence or guidelines. In a review of the preoperative testing literature for healthy, non-cardiac elective surgery between 2001 and 2011, the British Journal of Anesthesiology found insufficient evidence to support CRP screening in asymptomatic elective surgery patients.³ National and international guidelines, such as the National Institute for Health and Clinical Excellence and the American Society of Anesthesiology, do not recommend routine CRP screening in asymptomatic patients undergoing elective surgery.⁴,⁵

With regard to our patient, in the absence of a clear contraindication to surgery, the certain harm of avoiding THA may outweigh the potential of harm from perioperative morbidity. When thinking about the trade-offs between two interventions, it is important to balance the strength of currently available recommendations with the impact on patient long-term health. By doing this we can ensure that we provide care that is both grounded in the best available evidence and in accordance with patient preferences.
References


