Screen Early for TMJ in Juvenile Idiopathic Arthritis

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CHICAGO — Temporomandibular joint involvement is highly prevalent in children with new-onset juvenile idiopathic arthritis, but the absence of clinical symptoms or detectable swelling associated with the jaw condition in its early stages can delay diagnosis and timely treatment.

Recent studies have shown that as many as half, and possibly more, of all children with JIA have imaging evidence of temporomandibular joint (TMJ) arthritis, although few display clinical signs, such as impaired chewing ability, limited maximal mouth opening, pain, or crepitation, said Dr. Randy Q. Cron of the University of Alabama at Birmingham. "Usually we catch [TMJ arthritis] late, when we do some imaging because a patient's jaw looks smaller or is off center. Even though these kids have previously had normal findings on jaw examination, we see on MRI that they're pretty far gone in terms of effusions and condylar erosions."

To minimize the potential for micrognathia and malocclusion—and the associated aesthetic and functional sequelae of both—"screening for jaw involvement should be undertaken at the time of JIA diagnosis," Dr. Cron recommended. And because a history review and physical examination are insufficient screening measures, "medical imaging (specifically MRI, when possible) is required for an accurate diagnosis," he said.

Although there has been some suggestion that ultrasound might be a reasonable screening tool, a prospective study by Dr. Pamela F. Weiss at the Children's Hospital of Philadelphia, Dr. Cron, and colleagues suggests that ultrasound is not up to the task. The study was designed to determine the point prevalence of TMJ arthritis at disease onset in children with JIA using both MRI and ultrasound, said Dr. Cron. A secondary aim "was to compare MRI versus ultrasound for diagnosing TMJ arthritis," he said.

The study included 32 children (median age, 8.6 years) diagnosed with JIA between January 2005 and April 2007 who were prospectively evaluated for TMJ arthritis via questionnaires and physical examination to assess jaw pain and disability. The TMJs of all of the patients were imaged with both MRI and ultrasound within 8 weeks of diagnosis (Arthritis Rheum. 2008;58:1189-96).

Of the 32 patients, 75% were diagnosed with acute TMJ arthritis by MRI; none of the cases was identified by ultrasound, said Dr. Cron. Chronic TMJ arthritis was de-

Intra-Articular Injection Pearls

For optimal safety and efficacy, CT-guided intra-articular corticosteroid injection of the TMJ of children with juvenile idiopathic arthritis should be performed in conjunction with an experienced pediatric interventional radiologist, stressed Dr. Randy Q. Cron.

The following technique, which was evaluated in a recently published study by radiologist Dr. Anne Marie Cahill of the Children's Hospital of Philadelphia, Dr. Cron, and colleagues, "is safe and technically successful, even in patients with joint space deformities," according to Dr. Cron.

► Position the child supine in CT scanner with head rotated 45 degrees away from the TMJ to be injected.

► Perform axial CT scan through the area of interest.

► Prepare access site anterior to tragus with povidone-iodine and alcohol and anesthetize it with 1% lidocaine using a 30-gauge needle.

► Use CT to confirm needle placement for steroid injection in mandibular fossa.

► Inject long-acting steroid (1 mL triamcinolone acetonide) into TMJ with an 18- or 21-gauge needle.

In the aforementioned investigation, all of the procedures were performed on an outpatient basis, and none of the known potential immediate reactions to intra-articular steroid injection—such as pain, headache, joint infection, or loss of subcutaneous fat—was observed, according to the authors.

tected by MRI in 69% of the children, whereas ultrasound picked up chronic TMJ in only 28% of them, he said. Of the patients with acute TMJ arthritis, "more than 70% were asymptomatic and more than [60%] had normal findings on jaw examination, he noted.

The investigators also evaluated response to treatment with CT-guided intra-articular steroid injections among patients with TMJ arthritis identified on MRI, and determined that 56% of patients with acute disease—more than half of whom had been asymptomatic at baseline—had an improved maximal incisal opening after corticosteroid injection, said Dr. Cron.

In a previous retrospective study by the same research group, intra-articular corticosteroid injection was associated with increased mouth opening, decreased TMJ pain, and decreased TMJ effusions as detected by MRI in 23 patients in whom preinjection evidence of effusions (13 patients), bony erosions (19 patients), and condylar flattening (17 patients) was observed, Dr. Cron noted (Arthritis. Rheum, 2005;52:3563-9). Similarly, in a clinical review of a CT-guided percutaneous steroid injection technique in 15 JIA patients with TMJ arthropathy, the treatment resulted in substantial relief of clinical symptoms, when present, as well as resolution of related imaging abnormalities (AJR Am. J. Roentgenol. 2007; 188:182-6).

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These findings suggest that treating TMJ arthritis before the onset of obvious bone changes, facial asymmetry, and limited mobility can preserve normal jaw structure and function of JIA patients until they achieve disease remission, Dr. Cron said at a symposium sponsored by the American College of Rheumatology. Doing so, however, requires an awareness of the high prevalence of the condition as well as the implementation of a routine screening protocol in all new-onset JIA patients. "As clinicians, we see these patients every day. We have to remember that just because they're not complaining about pain or problems [in their jaw], it does not mean there's not inflammation that continues to rage on. Most likely, there is, and we have to be ready to treat it," he said. ■