

Recurrent Dorsal Subluxation of the Fifth Metatarsal-Cuboid Joint Secondary to Trauma

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ABSTRACT

A young woman presented with recurrent dorsal subluxation of the fifth metatarsal-cuboid joint secondary to trauma. The injury was treated by metatarsal-cuboid fusion without functional residual disability.

CASE REPORT

A 25-year-old woman with pain in the right foot reported injuring herself 3 months earlier while escaping a fire. While being rescued by a fireman, she placed her right foot on a fire-escape railing and her left foot on a ladder. She lost her balance and, while pulling herself back onto the ladder, placed severe eversion pressure on the right foot (Figure 1). She was taken to the emergency room of a local hospital, where she was examined and released. The next day she reported a painful "popping in and out" at the lateral aspect of her right foot whenever she put weight on it. This symptom continued intermittently until her visit to our clinic.

An examination of the foot revealed tenderness at the base of the fifth metatarsal and cuboid. Stress applied to the metatarsal-

cuboid joint in a plantar-to-dorsal direction elicited a subtle, painful click. Levering the fifth metatarsal plantarward produced pain and a mild click. Standing on tiptoe and jumping were painful and produced clicking. Roentgenograms and computerized tomography scans were negative.



Figure 1. Photo taken during fire-escape rescue. Note severe eversion of right foot, as indicated by the arrow.

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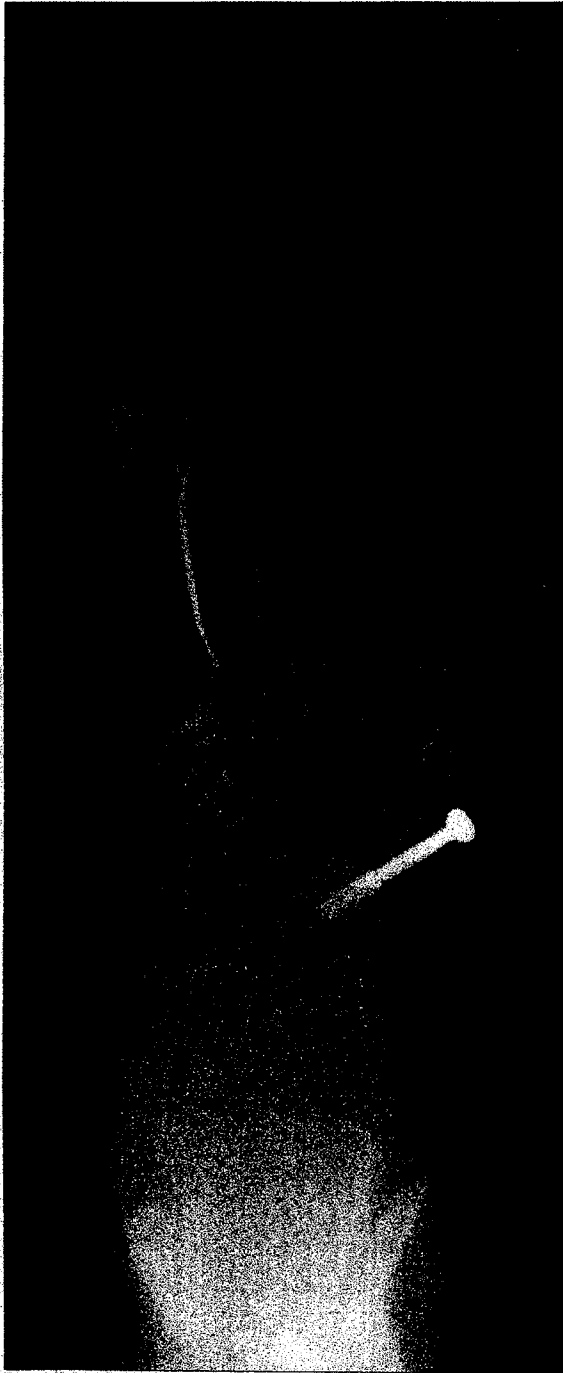


Figure 2. Fusion of metatarsal-cuboid joint using cancellous iliac bone and single lag screw.

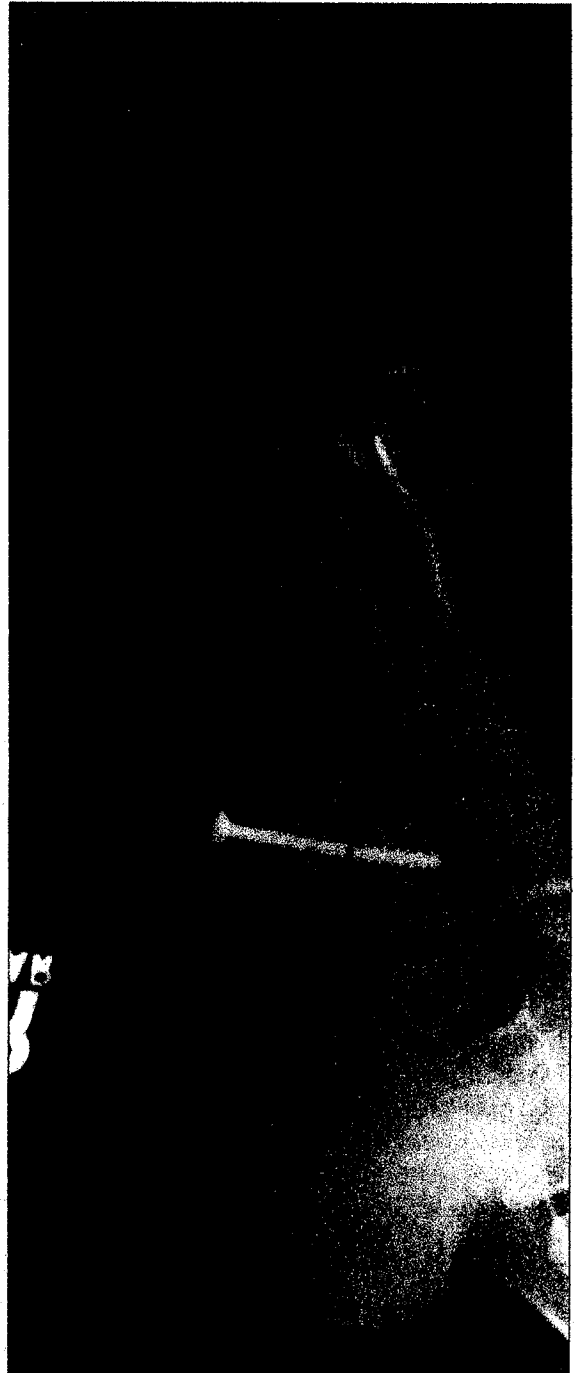


Figure 3. Six months after surgery, fracture of screw at shaft-thread junction.

She was instructed to rest and was treated with elastic support, crutches, and 3 weeks in a plaster cast. Because none of these treatments relieved her symptoms, fusion of the metatarsal-cuboid joint was performed using cancellous iliac bone and a single lag screw for fixation (Figure 2). After surgery, the foot was kept in a walking plaster cast for 8 weeks. Although the fusion procedure was successful, the lag screw fractured at the shaft-thread junction 6 months after surgery (Figure 3). She was asymptomatic with no significant findings, but because she experienced tenderness over the screw head when wearing a fitted shoe, the proximal portion of the screw was removed.

DISCUSSION

Proximal subluxation or dislocation of metatarsals is rare, but when it does occur, it is often accompanied by a fracture.¹ Low velocity longitudinal torque-rotational injuries may produce only minor radiographic changes, but soft-tissue damage can be severe. Capsules and ligaments can stretch and tear, and if treatment is inadequate, prolonged disability may result.² Major dislocations of the tarsometatarsal joint are easily diagnosed, but minor subluxations can be missed. Swelling and tenderness may be present, and manipulation can confirm instability. Arthrodesis of these minimal-motion articulations is the definitive treatment.

Recurrent subluxation of the fifth metatarsal-cuboid joint as described in this report did not respond to nonsurgical management but was treated without residual functional loss by metatarsal-cuboid fusion.

REFERENCES

1. Hardcastle PH, Reschauer R, Kutscha-Lissberg E, Schoffmann W. Injuries to the tarsometatarsal joint: incidence, classification, and treatment. *J Bone Jt Surg* 1982;64B:349-356.
2. Myerson M. Tarsometatarsal joint injury. *Physician Sports Med*. 1993;24(2):97-107.

ORUVAIL® (ketoprofen) extended-release capsules 200 mg

BRIEF SUMMARY OF PRESCRIBING INFORMATION:

INDICATIONS: For the management of the signs and symptoms of rheumatoid arthritis and osteoarthritis.

CONTRAINDICATIONS: Hypersensitivity to ketoprofen. Do not give if aspirin or other NSAIDs have induced asthma, urticaria, or other allergic reactions since fatal anaphylactic reactions have been reported in such patients.

WARNINGS: RISK OF GI ULCERATION, BLEEDING, AND PERFORATION WITH NSAID THERAPY: Serious GI toxicity (e.g., bleeding, ulceration, perforation) can occur at any time, with or without warning symptoms during chronic therapy. Minor upper GI problems are common early in therapy but physicians should remain alert for ulceration and bleeding even without previous GI-tract symptoms. Occurrence of serious GI toxicity is about 1% after 3-6 months of therapy, 2-4% after a year. Patients should be informed of signs and symptoms of serious GI toxicity of serious GI events and other risk factors of peptic ulcer disease (e.g., alcoholism, smoking, etc.) are the only factors associated with increased risk. Elderly and debilitated patients tolerate ulceration or bleeding less well and have more fatal GI events. High doses probably carry a greater risk. Consider benefit versus risk (of GI toxicity) in prescribing higher recommended doses.

PRECAUTIONS: Chronic administration of NSAIDs causes nephritis in mice and rats. Interstitial nephritis and nephrotic syndrome have been reported with ketoprofen since it has been marketed. A second form of renal toxicity is seen in patients having reduced renal blood flow or blood volume, where prostaglandins support the maintenance of renal blood flow. In these patients NSAIDs cause a dose-dependent decrease in prostaglandin synthesis and renal blood flow which may precipitate overt renal failure. Patients with impaired renal or hepatic function, heart failure, those on diuretics, or the elderly are at greatest risk. Discontinuation of NSAIDs typically leads to recovery. Since ketoprofen is primarily eliminated by the kidneys and its pharmacokinetics altered by renal failure, patients with impaired renal function should be closely monitored to identify a needed dosage reduction (see Individualization of Dosage in Full Prescribing Information). Borderline elevations of liver-function tests may occur in up to 15% and may progress, remain unchanged, or disappear with continued therapy. Patients with symptoms and/or signs suggesting liver dysfunction, or in whom an abnormal liver test has occurred, should be evaluated further as serious hepatic reactions, including jaundice, have been reported. SGPT (ALT) is the most sensitive indicator of liver dysfunction. Ketoprofen's pharmacokinetics are altered in patients with chronic liver disease and reduced serum albumin. Monitor such patients closely and reduce dosage as necessary (see Individualization of Dosage in Full Prescribing Information). To reduce or eliminate steroid dosage during therapy, go slowly and look closely for any evidence of adverse effects, including adrenal insufficiency and exacerbation of arthritis. Anemia is common in rheumatoid arthritis and sometimes aggravated by NSAIDs. Patients on long-term NSAID therapy should have their hemoglobin or hematocrit evaluated if they develop signs or symptoms of anemia. Peripheral edema was seen in about 2% of ketoprofen patients; use caution in patients with fluid retention, hypertension, or heart failure. **Information for Patients:** Physicians should discuss potential risks (see Warnings, Precautions, Adverse Reactions) and likely benefits with patients especially when other drugs offer an acceptable alternative for less serious conditions. Advise patients what to do if they experience major or minor GI symptoms. Minor GI symptoms are sometimes prevented by giving ORUVAIL with food or milk. (Food and milk affect rate but not extent of absorption; note that ORUVAIL has not been studied with antacids.) Advise patients not to take aspirin while on ORUVAIL. **Drug Interactions:** Diuretic: Patients on diuretics are at greater risk of renal failure secondary to decreased renal blood flow due to prostaglandin inhibition (see Precautions). Warfarin: Because prostaglandins are important in hemostasis and ketoprofen also affects platelet function, concurrent ORUVAIL/warfarin therapy requires close monitoring. Ketoprofen did not potentiate the effect of warfarin on prothrombin time. Methotrexate: Co-administration of methotrexate and NSAIDs may alter the elimination of methotrexate leading to elevated serum levels of the drug and increased toxicity. Lithium: NSAIDs were found to increase steady-state plasma lithium levels. Lithium levels should be monitored when given with ORUVAIL. Concurrent use of aspirin or probenecid with ketoprofen is not recommended. **Drug/Laboratory Test Interactions:** Effect on Blood Coagulation: ketoprofen decreases platelet adhesion and aggregation and can prolong bleeding time by about 3 to 4 minutes. There is no significant change in platelet count, prothrombin time, partial thromboplastin time, or thrombin time. **Cardiogenesis, Mutagenesis, Impairment of Fertility:** No evidence of cardiogenic or mutagenic potential. No impairment of reproduction or fertility seen in male rats. Female rats had decreased number of implantation sites. Rats and dogs had inhibition of, or abnormal spermatogenesis, at high doses and dog and baboon testes decreased in weight. **Teratogenic Effects: Pregnancy Category B:** No effects seen in rats or mice. Maternally toxic doses in rabbits produced embryotoxicity but not teratogenicity. Use not recommended in pregnancy. **Labor and Delivery, Nursing Mothers, Pediatric Use:** Use is not recommended.

ADVERSE REACTIONS: Incidence of common ADRs (>1%) was obtained from ORUVAIL trials lasting 4 to 16 weeks and ORUDIS trials lasting 4 to 54 weeks. Minor GI side effects predominated; more upper GI symptoms noted than lower GI. In controlled clinical trials peptic ulcer or GI bleeding noted in <1% of 1,076 patients; open label studies in 1,292 patients had rate >2%. Peptic ulceration incidence in patients on NSAIDs depends on many risk factors, e.g., age, sex, smoking, alcohol use, diet, stress, concomitant drugs such as aspirin and corticoids, plus dose and duration of treatment with NSAIDs. Next in frequency were CNS side effects such as headache, dizziness, or drowsiness. Incidence of some ADRs appears dose-related (see Dosage and Administration in package insert). Incidence >1% (Probable Causal Relationship): Digestive: Dyspepsia (11%), nausea*, abdominal pain*, diarrhea*, constipation*, flatulence*, anorexia, vomiting, stomatitis. Nervous System: Headache*, dizziness, CNS inhibition (i.e., pooled reports of somnolence, malaise, depression, etc.) or excitation (i.e., insomnia, nervousness, dreams, etc.).* **Special Senses:** Tinnitus, visual disturbance. **Skin and Appendages:** Rash. **Urogenital:** Impairment of renal function (edema, increased BUN)*, signs or symptoms of urinary-tract irritation. *Adverse events occurring in 3 to 9% of patients. Incidence <1% (Probable Causal Relationship): **Body as a Whole:** Chills, facial edema, infection, pain, allergic reaction, anaphylaxis. **Cardiovascular:** Hypertension, palpitation, tachycardia, congestive heart failure, peripheral vascular disease, vasodilation. **Digestive:** Appetite increased, dry mouth, eructation, gastritis, rectal hemorrhage, melena, fecal occult blood, inflammation, peptic ulcer, GI perforation, hematemesis, intestinal ulceration. **Hemic:** Hypocoagulability, agranulocytosis, anemia, hemolysis, purpura, thrombocytopenia. **Metabolic and Nutritional:** Thirst, weight gain, weight loss, hepatic dysfunction, hyponatremia. **Musculoskeletal:** Myalgia. **Nervous System:** Annesia, confusion, impotence, migraine, paresthesia, vertigo. **Respiratory:** Dyspnea, hemoptysis, epistaxis, pharyngitis, rhinitis, bronchospasm, laryngeal edema. **Skin and Appendages:** Alopecia, eczema, pruritus, purpuric rash, sweating, urticaria, bullous rash, exfoliative dermatitis, photosensitivity, skin discoloration, onycholysis. **Special Senses:** Conjunctivitis, conjunctivitis sicca, eye pain, hearing impairment, retinal hemorrhage and pigmentation change, taste perversion. **Urogenital:** Menometrorrhagia, hematuria, renal failure, interstitial nephritis, nephrotic syndrome. Incidence <1% (Causal Relationship Unknown): (listed as information to alert physicians) **Body as a Whole:** Septicemia, shock. **Cardiovascular:** Arrhythmias, myocardial infarction. **Digestive:** Buccal necrosis, ulcerative colitis, microvesicular steatosis, jaundice, pancreatitis. **Endocrine:** Diabetes mellitus (aggravated). **Nervous System:** Dysphoria, hallucination, libido disturbance, nightmares, personality disorder. **Urogenital:** Acute tubulopathy, gynaecomastia.

OVERDOSAGE: Symptoms may include lethargy, drowsiness, nausea, vomiting and epigastric pain which are generally reversible with supportive care. Respiratory depression, coma or convulsions have occurred following large ketoprofen overdoses. GI bleeding, hypo- or hypertension, or acute renal failure are rare. Forced emesis and/or activated charcoal, with a saline cathartic or sorbitol added to the first dose, may be initiated. Forced diuresis, alkalization of the urine, hemodialysis or hemoperfusion may not be useful due to ketoprofen's high protein binding.

DOSE AND ADMINISTRATION: RHEUMATOID ARTHRITIS AND OSTEOARTHRITIS: 200 mg daily. For patients who are small, over 75 years of age, or renally impaired, therapy with Orudis® (ketoprofen), 75 to 150 mg/day, is recommended. (See "Individualization of Dosage" in Full Prescribing Information.)

HOW SUPPLIED: 200 mg extended-release capsules. The appearance of this capsule is a trademark of Wyeth-Ayerst Laboratories.

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Reference:
1. Data on file, Wyeth-Ayerst Laboratories.

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