

Splints good as casts for minor wrist fractures -- when kids wear them

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Removable splints and plaster casts appears to be equally safe and effective for treating minor “buckle” wrist fractures in children, British researchers report in a new review of studies. However, a U.S. orthopedics expert argues that splints have a major disadvantage: kids can take them off at will.

“There are minor, or buckle, fractures of the wrist, particularly in toddlers and preschool infants, which are currently being over-treated with a plaster cast and clinic follow-up,” said lead investigator Alwyn Abraham, M.D., a consultant orthopedic surgeon in pediatrics at the Leicester Royal Infirmary. “Provided these are accurately diagnosed in an emergency department, these minor fractures can be treated with a removable splint. Removal can be done at home with no further follow-up.”

However, practical considerations work both ways when choosing between splints and casts, according to Leon Benson, M.D., spokesman for the American Academy of Orthopaedic Surgeons (AAOS).

“Yes, you can treat a child’s buckle fracture with a splint, but I don’t,” Benson said. “In my experience, a child under 10 is not going to keep a splint on, and who is going to take responsibility for that fact — the doctor” And, given that fact, what parent wants to sit on pins and needles waiting for it to happen when a safe plaster cast insures it won’t”

The review appears in the current issue of The Cochrane Library, a

publication of The Cochrane Collaboration, an international organization that evaluates medical research. Systematic reviews draw evidence-based conclusions about medical practice after considering both the content and quality of existing medical trials on a topic.

The reviewers looked at 10 studies involving 827 children with wrist fractures. They analyzed data on treatment of buckle fractures and more complicated fractures in which there is displacement of parts of the broken bone. However, the findings on treatment of displaced fractures were inconclusive.

Torus fractures, or buckle fractures, are common among children, who usually sustain these injuries by falling on an outstretched hand. Since children have softer bones than adults do, one side of the bone can buckle upon itself without disrupting the other side in this type of incomplete fracture. Traditionally, physicians treat buckle fractures by plaster casting the injury below the elbow for a short duration, usually about three weeks.

Of the studies that compared plaster casting for buckle fracture to removable splints, none reported an ensuing bone deformity in any patient using either treatment. The reviewers found no significant difference in healing of buckle fractures between traditional plaster casts extending either below or above the elbow.

Moreover, the removable Futura-brand splint was less expensive, less restrictive and preferred in the trials to traditional casts by children and parents, according to the researchers. Plaster casts that parents could remove at home did not lead to different outcomes and parents strongly preferred these to traditional casts.

“Minor (buckle) fractures could be treated by a splint that is removable at home,” the reviewers concluded.

While the AAOS's Benson, also an associate clinical professor of orthopedic surgery at the Northwestern University Feinberg School of Medicine, agreed in theory with the review's conclusions, he argued that they do not necessarily translate to a real-world setting.

"My experience is that the younger child's pain decreases dramatically more quickly with plaster casting than a splint, and adolescents in splints often remove them around their friends because they find them embarrassing," Benson said. "With a plaster cast, everyone can sleep at night; nothing can make that cast fall off. Yes, having a plaster cast for a few weeks is a hassle in ways, though it is possible to cover it and bathe or shower. But for the whole child and the whole family, it is a more reasonable treatment."

Benson said the economic implication of the findings could have potential negative effect: "A review like this could be used, in the UK system, to force people to use cheaper splinting methods of treatment rather than have a choice for plaster-casting for their child for reasons beyond narrow measures of clinical efficacy. This would be unfortunate."

Source: Center for the Advancement of Health

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