By Michael L. Schmitz, M.D.

Treat Them Like Children

Specialized care of pediatric fractures can help to maximize outcomes

Fractures are a somewhat common pediatric injury: About 15 percent of children will have a fracture before reaching skeletal maturity. The specialized care that benefits children in many other areas of medicine also applies to orthopaedics and fracture care. Pediatric fractures are substantially different from their adult counterparts for a variety of reasons:

- Children's bones are still growing. Certain treatments can harness growth to allow the child's bones to correct a fracture quickly and with less invasive treatment. By contrast, treatment methods for adult fractures can disrupt normal bone growth in children. The femur is a good example. Adults are often treated with intramedullary implants that can disrupt critical blood supply to the hip joint and stop bone growth around the knee in growing children. Different techniques and implants in children obtain the same excellent results but protect growth and minimize complications. In many cases a cast without any implants can be used in pediatric femur fractures.

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- Children's fracture patterns may be different. Some fracture patterns are age-specific. One example is the Tillaux fracture, an avulsion of the anterolateral tibial epiphysis commonly seen in adolescents. Without a high index of suspicion and an X-ray, this fracture can be easily misdiagnosed as an ankle sprain. The Tillaux is an intra-articular fracture that crosses into the surface of a weight-bearing joint, and failure to treat it properly can predispose a child to early arthritis.
- Children's compliance and activity levels are different. Most children run, jump, tumble and fall more than adults, and treatments must account for this. For example, in the case of a lower-extremity injury, an adult might be prescribed crutches and a removable splint. But because children generally cannot be trusted to keep the splint in place and utilize the crutches, a long leg cast would probably be more appropriate. Waterproof casts are used to account for the fact that children may not heed a physician's admonition to keep a cast dry. Unlike their adult-focused counterparts, pediatric orthopaedic surgeons have extensive experience working with both children and their parents to ensure compliance.

For these reasons and others, pediatric patients with fractures are best served by a treatment system that specializes in children and understands how they are different in every aspect, ranging from safety in fracture diagnosis (i.e., child-specific protocols for radiation dosing and sedation when using advanced imaging) to emergency and urgent care and follow-up care.

Children with fractures should be referred to a pediatric specialist until they reach skeletal maturity—typically age 14 for girls and 16 for boys. To ensure that their patients receive appropriate fracture care, community pediatricians should get to know the pediatric orthopaedic surgeons in their area and discuss with them any barriers that might exist to getting fracture care in the appropriate time frame.

In the case of open fractures—which require emergent care—paramedics, parents and pediatricians who guide treatment should be aware that adolescents who may not have reached skeletal maturity should be sent to a children's hospital.

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