Pediatric Spinal
Immobilization: C-Spines, Car Seats, and Color-coded Collars

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C-Spines and Spine Boards

We have all been taught that "children are not little adults." This lesson is especially true when considering the proper methods for immobilizing ill injured children. There are crucial anatomic differences that must be taken into consideration. The normal "adult" spine of young children is that their heads are disproportionately large. Placing children in a supine position, flat on their back, line force the chin of their bracer head over their chest. Of their smaller body, positioning them in such a way as to lead to a potential airway compromise. Therefore, special inventions for the positioning of children d10uld be considered. These inventions may be as simple as placing a diaper or rowel roll under the shoulders of the pediatric
parien(, a in1plr technique rh1t ch1n ben3r posi1n
the he1d and airway. This intervention is tllight in
Pediatric Adv1nced Life Support (PALS), Emmerge&
Nmse ized Jdediatric Course (ENPC), and Prehospital Emer-
gency Pediatric Program (PEPP) classes, and it applies to
pediatric injuries requiring spinal immobilization as
well. There is a&1Stable ped1" Lmec
p1d (Jnome Medical, Moorestown, NJ) that can be
plied on a c1rr or conventional spine board to help
With proper he1d and neck posi1nmg. The pa&1t's
plor is color coded (Figures 2 and 3) to show the popular
Rmelow t1) and system (Vital Signs, Inc. Tolnaw 1, NJ),
which is quickly becoming a "standard" in EMS and ED
plor&1fic cue.

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flat on their backs, can force the chin of
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such a way as to lead to a potential
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Another method for attaining proper head and neck
position for a pediatric injury patient is through the use
of specially designed pediatric spines (Iron Duck,
Chicopee, Mass). These devices are &1St identified for
pediatric p1nies because they are much shorter in
length and width than the standard spine board. In
addition, unlike usual shor1 hounds or extraction device's,
some of these pediatric boards even have a "head drop"
built into the board to offer their larger he1d. Unforun1tly,
one size does nor fit Ill, and the "d1w1)"
mly be too deep or too shallow 111 any individual chi1d.
Additional padding under the shoulders or head may be
required to achieve proper spinal \textit{immobilization}\cite{11,12,13,14} (figure 4).

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\textbf{Car seats}

EMS providers are concerned about the proper immobilization of children found in car seats. Should they be taken out of the car safety seat and immobilized on a spinal board or just immobilized in the car seat? Both approaches are described in the EMS and emergency care literature\cite{15,16,17,18,19,20}. Parents generally are counseled to replace any child car safety seat involved in a motor vehicle crash (MVC). However, at the scene of the crash, if the en...
Collars

In addition to spine boards and the ever-popular rowels (and rape, cervical collars are an integral part of spinal immobilization. Unfortunately, experienced providers have found that many pediatric cervical collars simply do not fit children. The problem is finding a collar that not only optimizes cervical motion limitation and also properly rests the patient in order to avoid improper spinal position and skin breakdown.28, B. J. tt 29

There are now collars available for EMS and longer-term hospital use that are specifically designed for children and which actually fit the pediatric patient. In addition, implementing proper pediatric spinal immobilization can result in benefit from the use of the Broselow-Loren "color coding" system. While there may be several sources for pediatric cervical collars with color codes, the Loc and Miam-Jr collars by Jerome Medical follow the Broselow-Loren system (Jerome Medical, Moorestown, NJ).

REFERENCES


Submissions to this column are welcomed and encouraged. Contributions should be sent to one of the following:

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