

## GRAND ROUNDS SAMPLE OPINION

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### Expert opinion provided by:

Dr. David Skaggs

#### Chief

Children's Hospital Los Angeles, Children's Orthopaedic Center

#### Professor of Clinical Orthopaedic Surgery

Keck School of Medicine of USC

#### Director

Children's Hospital Los Angeles, Scoliosis and Spinal Deformity Program

### ABOUT DR. SKAGGS

Dr. David Skaggs is Chief of the Children's Orthopaedic Center and the Director of the Scoliosis and Spinal Deformity Program at the Children's Hospital of Los Angeles. He is also a Professor of Clinical Orthopaedic Surgery in the Keck School of Medicine at the University of Southern California and a member of the Board of the Pediatric Orthopaedic Society of North America. As an avid researcher and educator, Dr. Skaggs has written three textbooks, published over 80 peer-reviewed articles, presented over 300 lectures, and has appeared on many television shows, and has been a visiting professor at many top medical schools.

### Education

Medical School - Columbia University College of Physicians and Surgeons

Internship - Columbia-Presbyterian Medical Center

Residency - Columbia-Presbyterian Medical Center

Fellowship - Pediatric Orthopaedic Fellowship, University of Southern California

### Awards

Board of Directors, Pediatric Orthopaedic Society of North America

Member, American Academy of Orthopaedic Surgeons

Member, Scoliosis Research Society

### Selected Publications

Tolo, V.T.; **Skaggs, DL**. *Master Techniques in Pediatric Orthopaedic Surgery*.

Philadelphia: Lippincott, Williams & Wilkins, 2008

Sankar WN, Weiss J, **Skaggs DL**, Orthopaedic Conditions in the Newborn. *J Am Acad Orthop Surg* 2009 17: 112-122.

Location of the vertebral artery at C1 in children: how far out laterally can one safely dissect? Goldstein RY, Sunde CD, Assaad P, Grimm J, **Skaggs DL**, Andras L. *J Bone Joint Surg Am*. 2014 Sep 17; 96(18):1552-6.

### SUMMARY FOR THE PATIENT

Thank you for allowing me to review your case and provide my opinion. Before I answer your questions and provide my recommendations, let me summarize your daughter's medical history and concerns based on what I have learned from her medical records and the questionnaire you completed.

Your 4 month old daughter sustained a fracture of her right femur on April 11th of this year. The injury occurred when she was being held by a family friend and slipped off his shoulder and he caught her by grabbing her right leg. She was uncomfortable that night and had difficulty sleeping. You took her to see her primary care physician the following day, but no x-rays were taken at that visit. Because she became fussier over the course of the day, you took her to the emergency room later that evening. An x-ray taken in the ER reportedly demonstrated a fracture in the middle of her right femur. Your daughter was placed in a Pavlik harness on April 13th and transferred to Mercy Hospital for additional care.

Three days later, she was seen by Dr. Joe Smith at Mercy Hospital. At that time it was felt that she was doing well. She was scheduled for additional follow-up evaluation in 1 week. She was seen again on April 17th with no change in her treatment plan; she remained in the Pavlik harness.

She saw Dr. Smith again on the 30th; at that time, it was noted that she had "turned the corner" and was no longer in pain. X-rays from that day revealed that the fracture was healing well and that the bones were well aligned. Dr. Smith recommended that she remain in the harness and return in 2 weeks for re-evaluation. He anticipated that the harness would be removed at the next follow-up visit.

You are concerned about potential long-term side effects of having the femur fractured at such a young age. And, if there are any, you would like to learn how they can be eliminated or minimized.

## PATIENT'S QUESTIONS

Before responding to your specific questions, I'd like to start by simply reassuring you that your daughter's care has been excellent and that her leg is healing well.

### *Is a Pavlik harness the best way to be treating our daughter's fracture?*

The first 6 months of a child's life is a time of extremely rapid growth. For this reason, femur fractures typically heal rapidly and complete healing as expected. In a child your daughter's age (less than 6 months), this type of fracture can be treated with either a Pavlik harnesses or a spica cast (a cast used to immobilize the hip or thigh); both approaches result in good outcomes. The only difference between these two treatments is that children who are treated with casts tend to have more skin complications (e.g. the skin breaks down where the cast rubs against it), which is why I generally prefer the Pavlik harness.

### *Is there anything else we should be doing to optimize the healing process?*

I have reviewed your daughter's most recent x-rays and it appears that the fracture is already nearly healed as there is a lot of newly formed bone, called fracture callus. In fact, based on the x-ray taken on April 30th, the fracture has healed sufficiently, so treatment can be stopped.

### *Are there any potential long-term side effects of having the femur fractured at such a young age?*

You might be concerned because, when you touch your daughter's thigh, you feel a bump or lump at the site of her injury. What you are feeling is a large amount of new bone that has formed as part of the healing process. Do not worry about this. It is perfectly normal and a natural part of fracture healing; it will naturally decrease over the course of the next several months.

The x-rays that are available to me are limited, so I cannot comment on how straight the bone has healed. However, even if it is not straight at this time, it will likely grow straighter over time because bone constantly remodels itself. I would anticipate that your daughter's femur will assume a normal shape over about the next year or so.

It is possible that the femur has healed in a position in which one piece of the bone is rotated a bit compared to the other piece. If this has happened, it may mean that your daughter will walk with the foot turned in or out a bit. There is nothing to do about this at this point. It will likely never be a problem but, if it is, it can be surgically corrected in the future. Again, if this has occurred (and it is difficult to know this at this time), it will likely never be a problem that requires treatment.

Similarly, the femur can heal in a position that makes that bone a little short or a little long compared to the other femur. Again, it is unlikely that this will ever be a problem. In fact, 40% of Americans have 4mm of difference in the length of their legs, and any difference under 21 mm does not require treatment. Even if this were the case, the length of your daughter's femur may adjust itself over the next 1-2 years as remodeling of the bone continues.

Finally, it's unclear why, but children with broken femurs sometimes limp for a couple of months afterwards. It's not a big deal and resolves on its own. Because your daughter won't be walking for many months, she may never limp.

### *How can we proactively eliminate or at least minimize any potential complications from the fracture?*

There is nothing to do at this time. And there is probably no need to worry, as the risk of complications is quite low with this type of fracture when it is properly treated, as your daughter's has been. Examinations by your daughter's doctor in the future can determine if the femur is abnormally rotated, and possibly, x-rays can be used to assess leg lengths and healing. However, this only needs to be done if she shows signs that there might be a problem such as the foot turning in or out when she walks, or the leg looking crooked. If she looks great clinically, there may be no reason to subject her to testing and radiation.

I hope you find the information that I have provided to be useful. While I'm sure it's been difficult having your daughter in a harness for the past several weeks, you can rest assured that the hardest part of the healing process is now behind her, and it appears that she will have a full recovery.

### RECOMMENDATIONS FOR THE PATIENT

From my review of your daughter's x-rays, it appears that her fracture has healed well. At this point, there are no precautions that you need to take. In fact, the bone is almost as strong as if it was never broken.

### REFERENCES FOR THE PATIENT

<http://orthoinfo.aaos.org/topic.cfm?topic=A00424>

[http://www.hss.edu/conditions\\_femur-fractures-in-children-broken-thigh.asp#.VCmQzCldU6U](http://www.hss.edu/conditions_femur-fractures-in-children-broken-thigh.asp#.VCmQzCldU6U)


### REFERENCES FOR THE TREATING PHYSICIAN

The most comprehensive discussion of femur fractures can be found in the textbook Rockwood and Wilkens "Fractures in Children".

<http://www.ncbi.nlm.nih.gov/pubmed/23774204>

“ The experience of working with Grand Rounds for this patient was truly outstanding. I do multiple 'at a distance' consultations each week for other doctors, patients, friends, etc. and working for Grand Rounds was honestly the best. All of the information I needed was in one place, well organized and easily available. This is absolutely key. The questions were clear, direct, and organized. I knew what I needed to do. Having a skilled MD/editor go through my answers improved what was delivered to the patient. I will be fairly compensated. Most importantly, I feel I am part of a team delivering a real quality product that will help the patient/client in need. I honestly could not give a higher recommendation to peers to partner with Grand Rounds. ”

- Dr. David Skaggs



If you have any questions or need help, get in touch!

[experts@grandroundshealth.com](mailto:experts@grandroundshealth.com)

1-800-991-6430

[grandrounds.com](http://grandrounds.com)

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