Traction In EDF Casting For EOS - How Much And What Happens?

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Disclosures

- Shyam Kishan, M.D.: A; K2M.
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- Cody Shafer: None

Introduction

- While EDF Casting for Early Onset Scoliosis (EOS) has gained popularity and acceptance, little is known about the amount of traction needed for the technique.
- Mehta described this as a very subjective feel of the traction straps.
- No concrete values of the traction required in this technique were found in a PubMed search in English.
- This study reports on the traction used in a consecutive series of EOS patients undergoing EDF casts, describing how much traction was used and the changes in traction during the procedure.

Methods

- **24** children (10mo to 9 years) with EOS were brought to the OR for 35 EDF Cast applications under general endotracheal anesthesia using a standard protocol.
- Measurements of traction were made using a simple "fish scale" connected in series to the halter used.
- Traction was measured at 3 points - initially, next at the beginning of cast application and lastly just before the patient was taken off traction.
- A scatter plot was used to describe the changes in traction during the procedure.
- Average patient weight was 34 lbs, age 3.4 years and curve magnitude 36.4 degrees.

Casting Setup

In line Scale to measure traction in pounds.

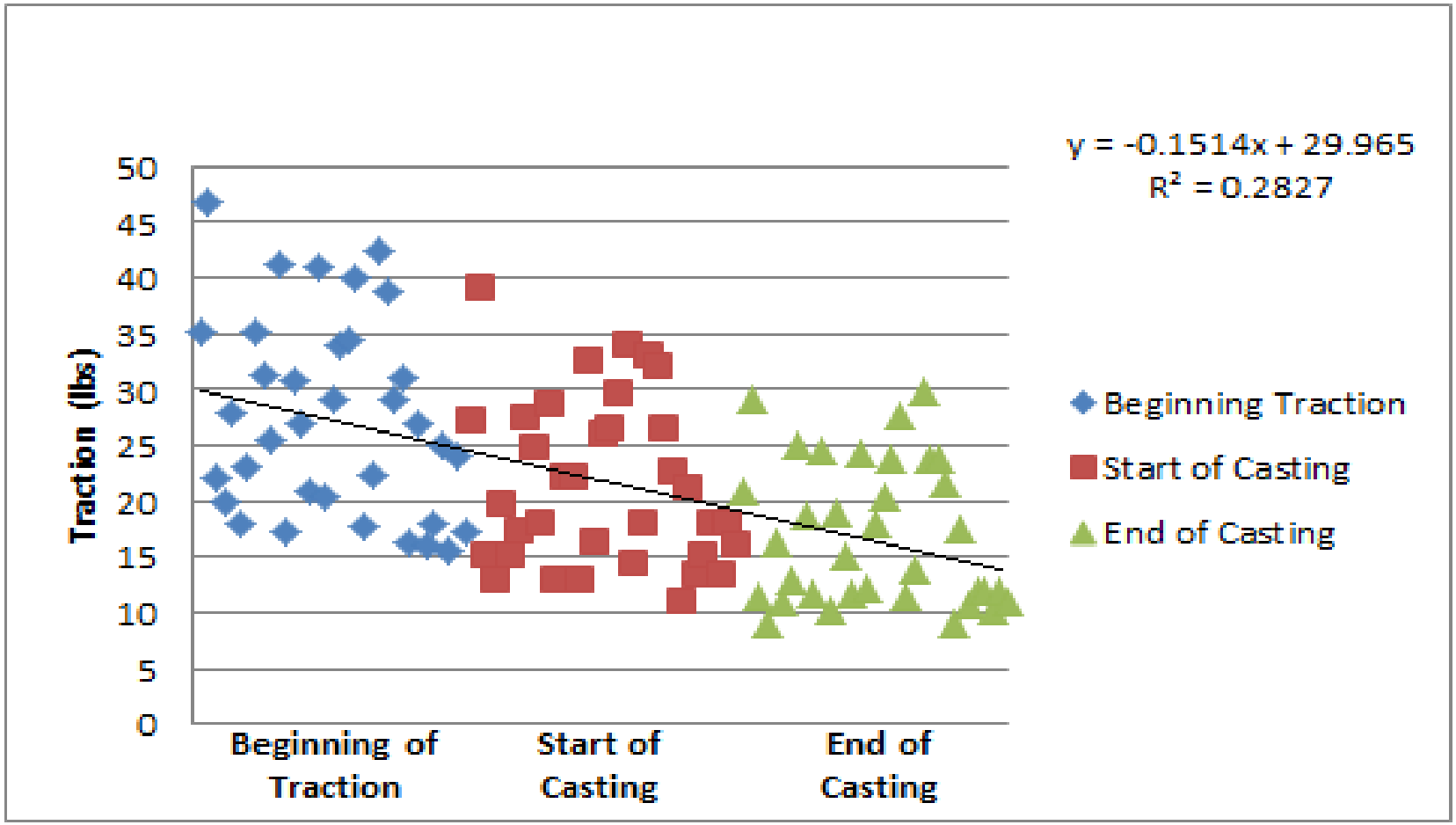
Results

- The average starting traction was 27.8 lbs which decreased to 21.6 lbs at the beginning of cast application, and 17.1 lbs at the end of casting.
- This represented an average of 0.8 lbs of starting traction per lb of body weight, and 8.2 lbs per year of age.
- The average curve correction noted was 34.3%.

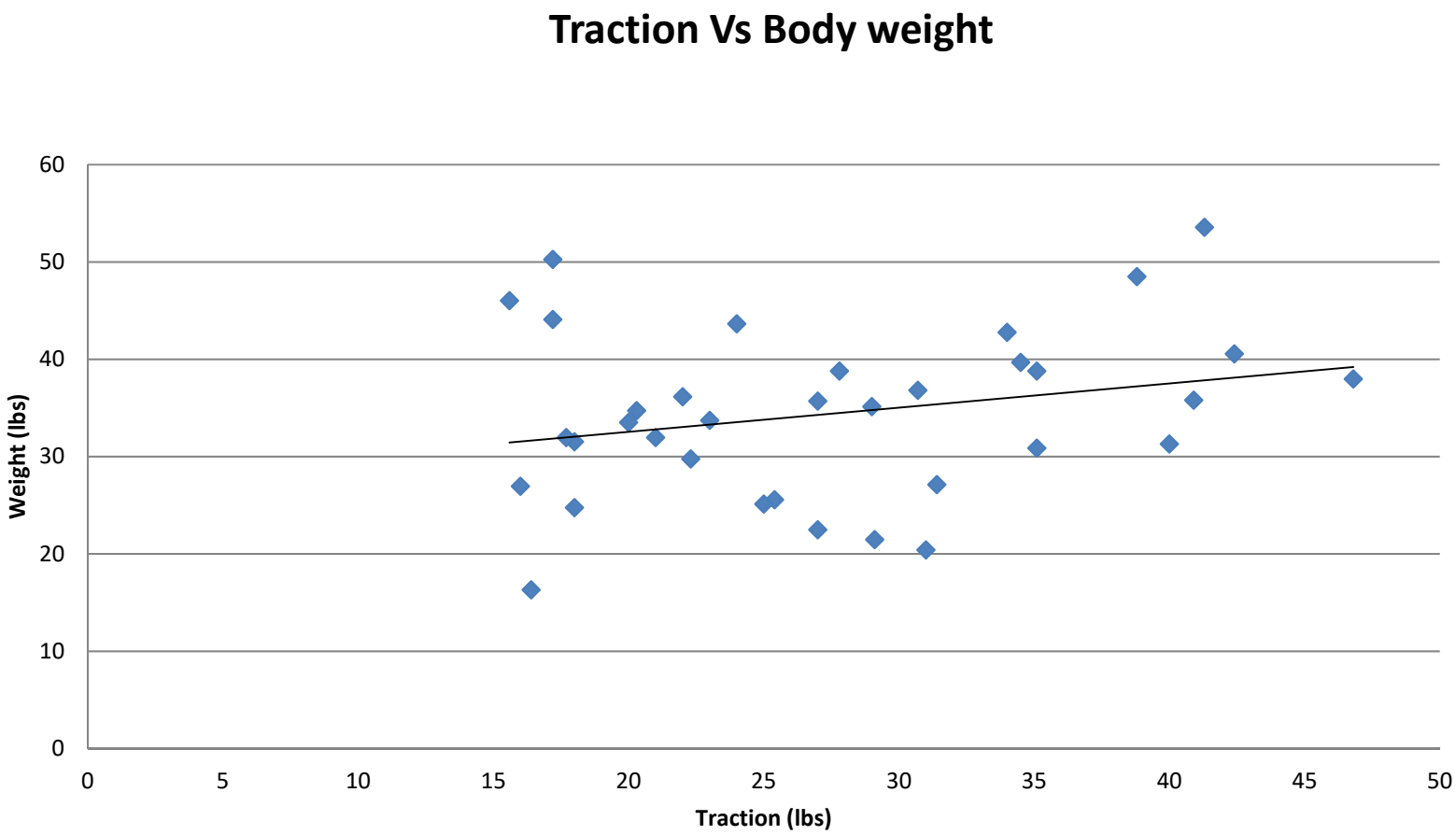
Changes in Traction

TRACTION in Pounds	Immediately after Traction Application	Just before Cast Application	Just after Cast Application
Average	27.76	21.64	17.07
Average lb of Traction / lb of body weight	0.81	0.63	0.50
Average lb of Traction / Year of Age	8.24	6.43	5.07

Traction Vs. Time



Traction Vs. Body Weight



CONCLUSIONS

- The visco-elastic nature of the spine is well demonstrated in this study, as is an idea of how much traction to use in EDF casting.
- A starting traction of about 0.8 lbs per lb body weight of the child seems to work quite well in this EOS patient cohort.
- Other variables such as etiology of curve and curve magnitude may well play a part in the amount of traction required.
- Further study with longitudinal follow-up of these patients is under way.

Thank you!