

Optimization of Casting in Infantile Scoliosis

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Methods:

- Two surgeons trained directly with Ms. Mehta.
 - Traction with manual manipulations.
 - D shaped posterior cut-outs.
 - Planned cast change intervals.
- Center A
 - Radiographs at each cast change.
 - Over the shoulder casts.
- Center B
 - Radiographs every 6 months.
 - Under arm casts.



3 yo or less at first cast.
At least 50° curve magnitude.
Minimum 3 year follow up.
Neuromuscular diseases other than syringomyelia and congenital curves excluded.

- Center A
 - 40 over shoulder Casts.
 - Radiographs during each casting session.
 - Mean follow-up 6.2years.
- Center B
 - 36 under arm casts.
 - Radiographs at most every six month.
 - Mean follow-up 5.9 years.



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Curve resolution at follow-up (Minimum 3 year follow-up)

| | Number of Children | Cured |
|----------|--------------------|----------|
| Center A | 40 | 9 (23%) |
| Center B | 36 | 11 (31%) |

- P=0.1 in Multivariable Statistics, so difference explained by chance alone.

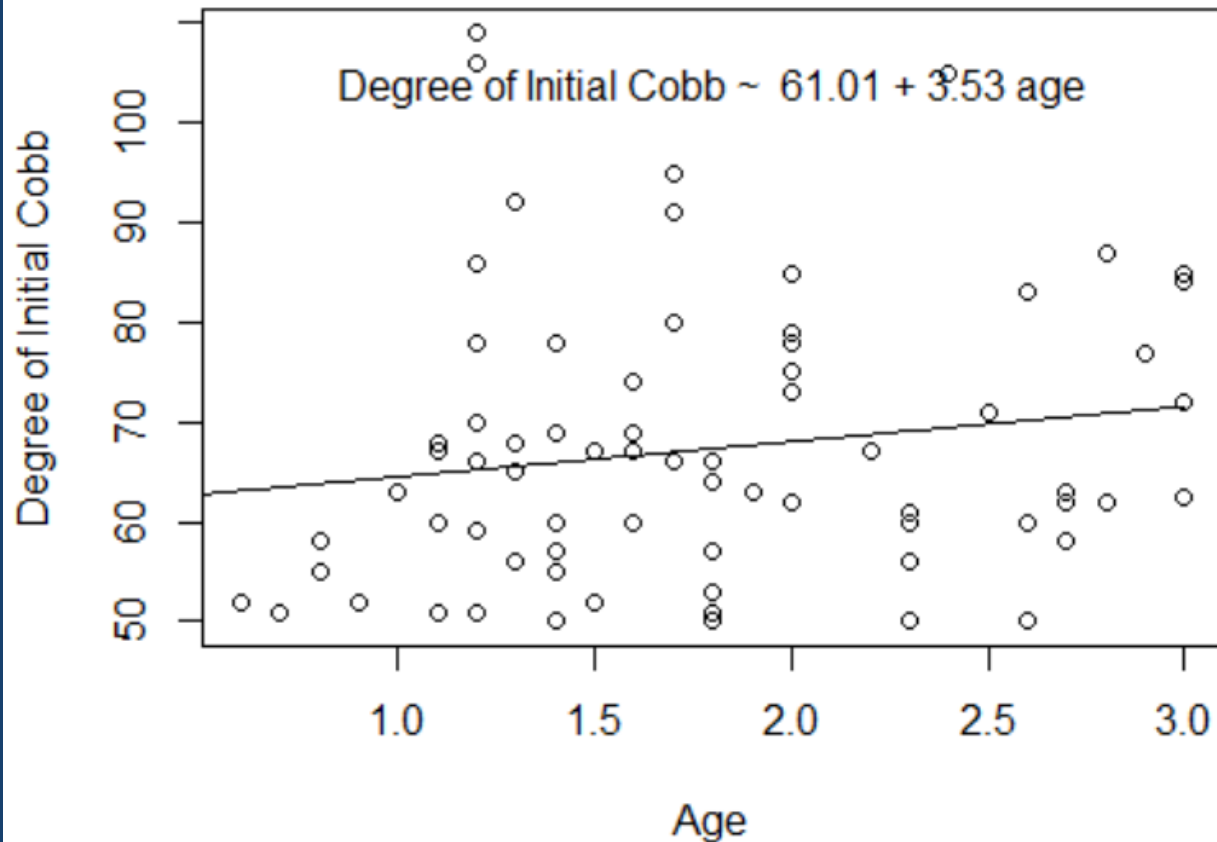
Effect of Syrix or Genetic Syndrome

| | Number of Children | Cured |
|---------------------------------------|--------------------|---------|
| Center A No comorbidity | 30 | 7 (23%) |
| Center A Syrix or Genetic Syndrome | 10 | 2 (20%) |
| Center B No Comorbidity | 26 | 8 (31%) |
| Center B Syrix or Genetic Syndrome | 10 | 3 (30%) |



Age vs Curve Magnitude at Presentation

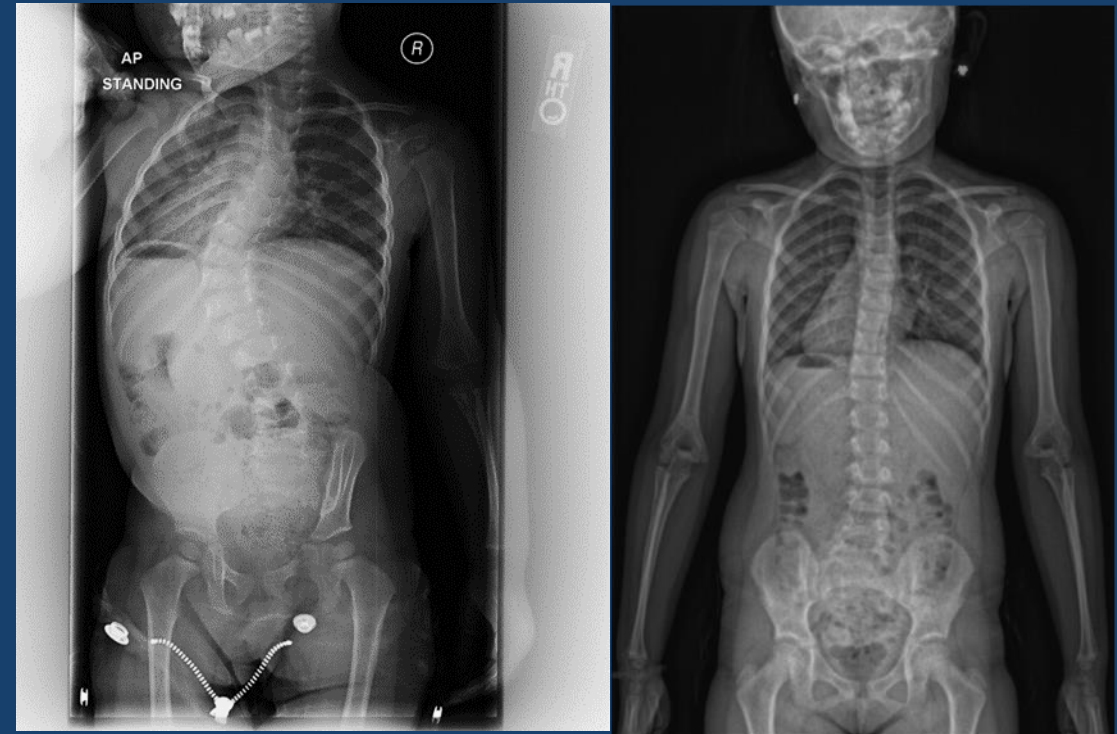
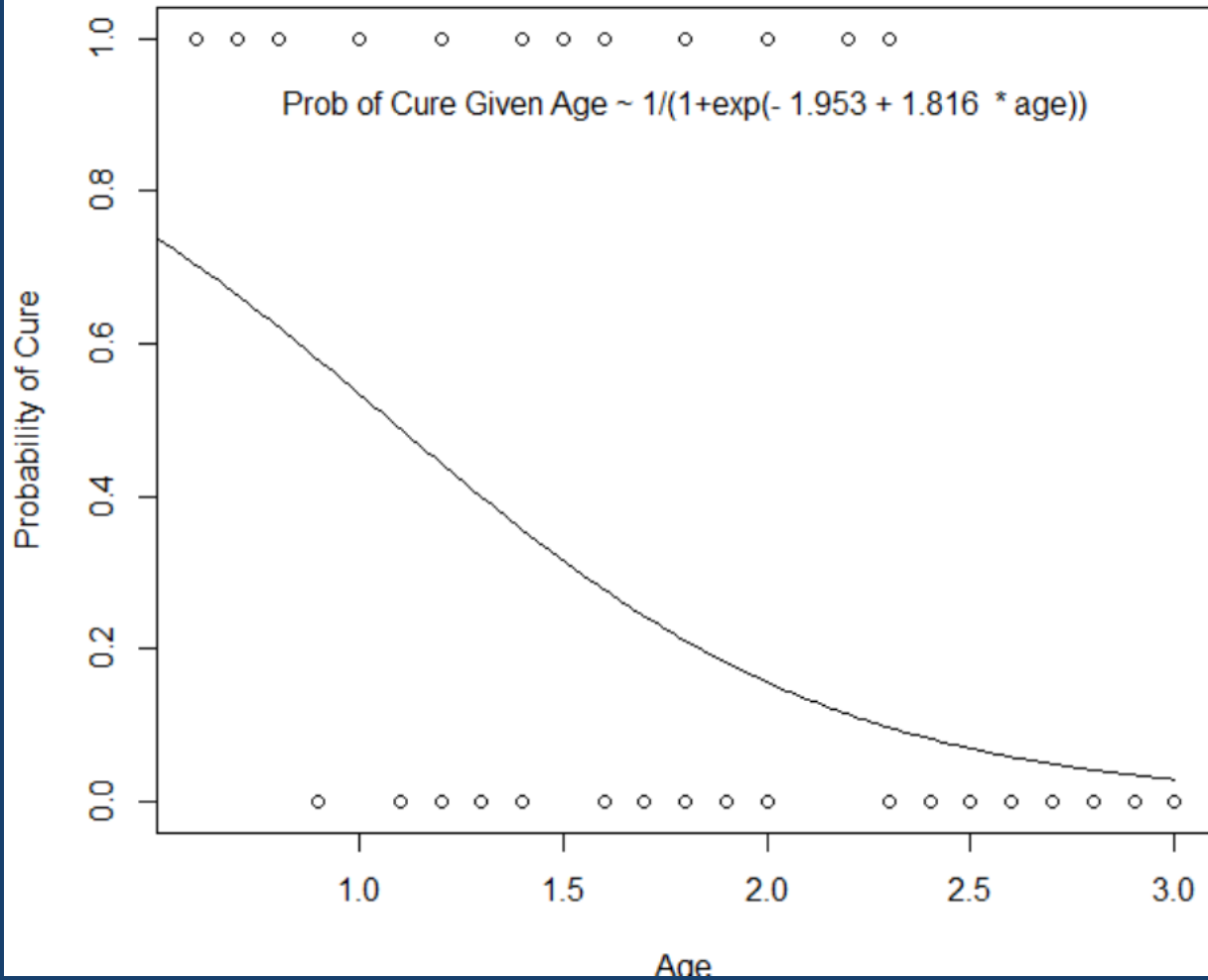
Initial Cobb plotted against Age



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Probability of Cure with Age

Cure plotted against Age

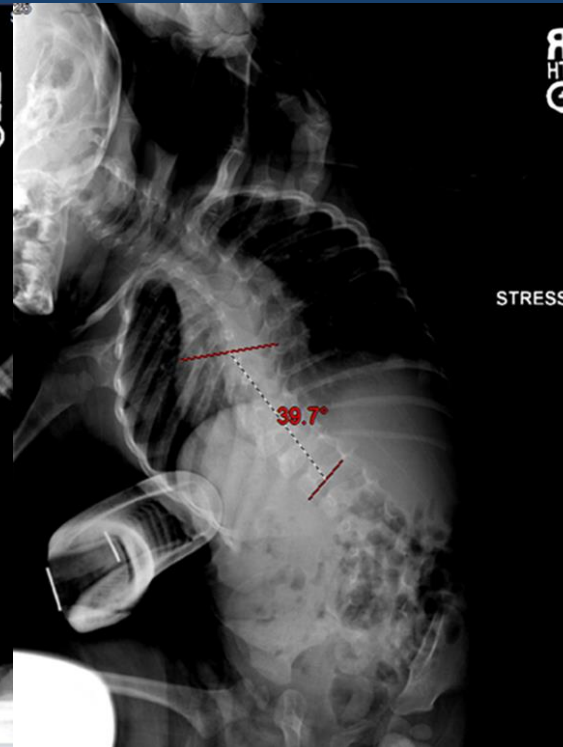
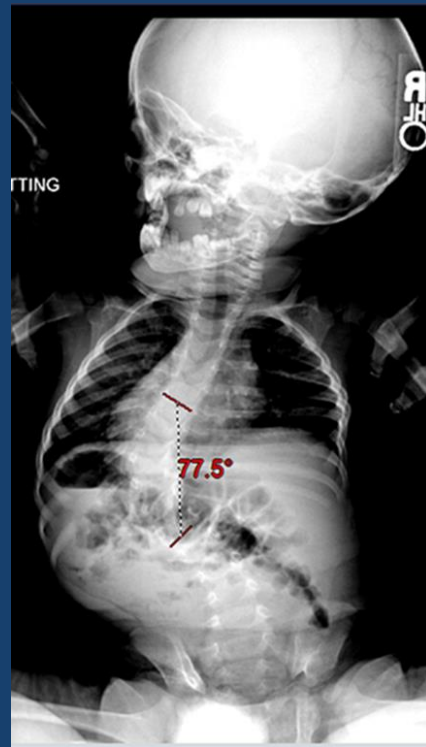
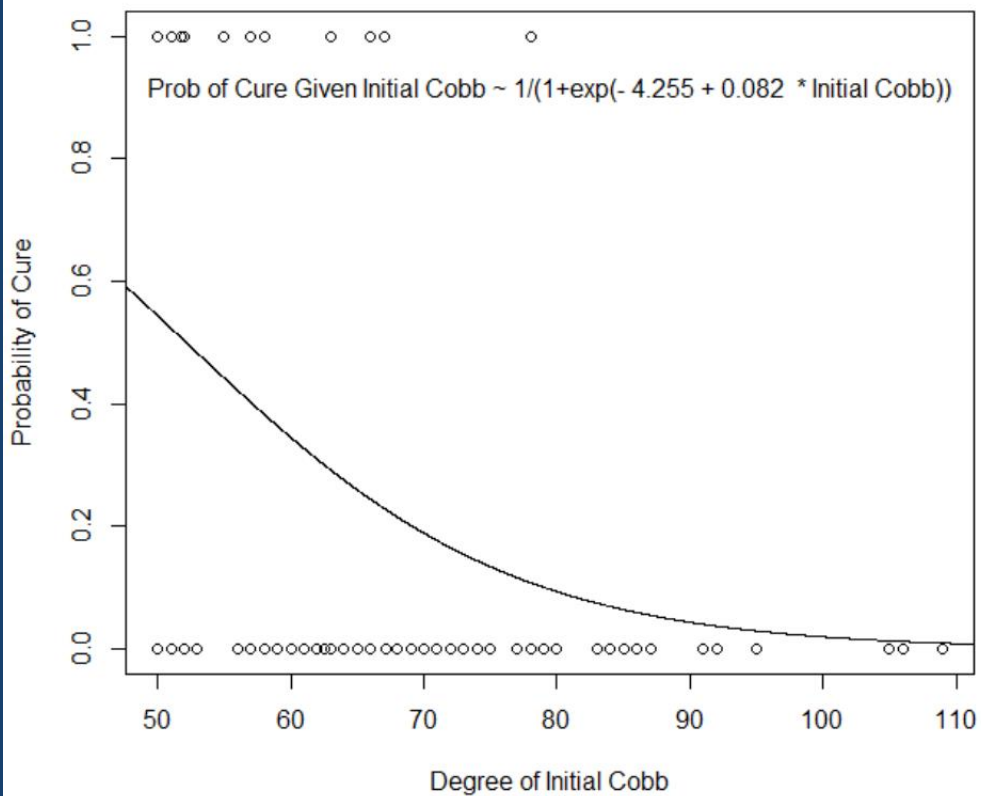


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Probability of Cure with Curve Magnitude

1.2 yo boy at presentation and at age 7 after 28 months of casting.

Cure plotted against Initial Cobb



Conclusions

- Frequent radiographs gave no advantage.
- Over the shoulder casting is not necessary.
- Starting early is critical to curve resolution even in large curves.
- Cures are possible with very large curves and in older children.



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Thank you



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