INTRODUCTION

- Traumatic injury from motor vehicle crashes is the leading cause of death in children (NHTSA 2009). The reason is an increase in the number of occupants in motor vehicles relative to the number of pedestrians. In the United States, rib fractures are the most common injuries sustained in motor vehicle crashes. Few studies exist that explore the material properties, mechanical behavior, or function within intact immature human bone specimens, which are all common to prevent injury in motor vehicle crashes and in other mechanical mechanisms.

- The objective of this study is to examine material and structural properties of pediatric ribs and explore their relationship with mechanical properties.

- It is often assumed that bone is a homogenous material in the context of a simple composite network. There is histological evidence of the co-existence of primary and secondary bone. Secondary lamellar bone is a complex composite material. Due to the lack of histological evidence of the coexistence of primary and secondary bone, it is suggested that the material properties are also different. It is important to account for these differences in studies on intact bone.

- Due to a high activation frequency of remodeling events in adults, large amounts of mechanical properties are common. Isolated, primary bone has a negative effect on bone strength (Marti et al. 1997). To reflect this, the material properties of pediatric ribs are different from those of adult ribs. It is important to account for these differences in studies on intact bone.

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- RESULTS & DISCUSSION

- CONCLUSIONS

- Acknowledgments

- References

- DETERMINING THE RELATIONSHIP BETWEEN MATERIAL PROPERTIES AND MICROSTRUCTURE OF HUMAN PEDIATRIC RIBS

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