COMPUTER-AIDED MECHANICAL DESIGN IN ORTHOPEDICS

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ABSTRACT

Computer-aided mechanical design is the useful technology in mechanical design at present. It is also applicable in biomechanical design. The good example is the application in orthopedics. In this short article, the authors summarize and discuss on important reports on computer-aided mechanical design in orthopedics.

KEYWORDS: Computer-Aided, Mechanics, Design, Orthopedics.

INTRODUCTION

Computer-aided mechanical design is the useful technology in mechanical design at present. It is also applicable in biomechanical design. The good example is the application in orthopedics. In this short article, the authors summarize and discuss on important reports on computer-aided mechanical design in orthopedics.

SUMMARY OF IMPORTANT REPORTS

There are some interesting reports on computer-aided mechanical design in orthopedics. The important ones are hereby listed

- Wang et al. reported on design and fabrication of a precision template for spine surgery using selective laser melting (SLM) [1].
- Shyagaliet al. reported on finite element study on modification of bracket base and its effects on bond strength [2].
- Kulduket al. reported on biomechanical comparison of effects of the Dynesys and Coflex dynamic stabilization systems on range of motion and loading characteristics in the lumbar spine [3].
- Swieszkowski and Kurzydlowski discussed on numerical modeling in the design and evaluation of scaffolds for orthopaedics applications [4].
- Wiedinget al. reported on biomechanical behavior of bone scaffolds made of additive manufactured tricalciumphosphate and titanium alloy under different loading conditions [5].
- Perez et al. reported on a computational evaluation of the effect of intramedullary nail material properties on the stabilization of simulated femoral shaft fractures [6].
- Sutherland et al. discussed on use of general purpose mechanical computer assisted engineering software in orthopaedic surgical planning [7].

CONCLUSION

There are many interesting publications on using computer-aided mechanical design in orthopedics. It is no doubt that computer-aided mechanical design is an actual useful new technology for clinical practice, especially for

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orthopedics which is based mainly on biomechanic principles.

CONFLICT OF INTEREST: None

REFERENCES


