The United States Leads Global Innovation in Orthopaedic Surgery via Venture Capital Funding

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INTRODUCTION: This study characterizes venture capital (VC) investments in orthopaedic surgery over the past twenty-five years to evaluate trends in global innovation.

METHODS: All VC investments related to orthopaedic surgery between 1/1/2000 and 12/31/2024 were retrospectively evaluated using the PitchBook database (PitchBook Platform, PitchBook Data Inc. Seattle, WA). Headquarter location of each company was reviewed. The year of each investment deal, and investment size (US dollars) were aggregated. Deals were also evaluated with respect to funding category (surgical devices, biotechnology, drug discovery, hospital management/technology, medical equipment). Descriptive statistics, compound annual growth rate (CAGR), two-sample *t*-tests, and regression analysis were conducted.

RESULTS: Over the study period, a total of $9.7 billion (in 2025 USD) in VC funding was invested in orthopaedic surgery, consisting of 1506 distinct deals. VC funding has steadily increased since 2000, most notably between 2020-2024, with 49.8% (750) of deals (P<0.001) and 71% of total funding ($7.8 billion) (P=0.024). Privately held companies made 98% (1481) of deals. Surgical devices lead VC investment with 34% (514) of deals totaling $3.5 billion, with biotechnology following with 30% (457) of deals for $3.3 billion. These two categories saw significantly more investments than the remaining categories (P<0.001). Orthopaedic companies based in the United States of America (USA) received the most funding (811 deals, $6.9 billion). China, Japan, United Kingdom, Canada, and South Korea followed, though with significantly fewer investments than the USA (P<0.001).

DISCUSSION AND CONCLUSION: Venture capital funding in orthopaedic surgery has steadily increased over the past 25 years, largely concentrated in the United States, with a dramatic increase in the past 5 years. Macroeconomic forces have a direct impact on private sector funding and innovation within orthopaedics, but do not always translate to meaningful clinical impact.