Preliminary title:

Implementation of a Database for Unstructured Multi-modal Sarcoma Data from 10.000 Patients

(master thesis)

Abstract

Bone and soft tissue tumors (sarcomas) are rare diseases overall but occur comparably often in children and adolescents (>10% of all cancers). The complex and time-consuming diagnosis in a specialised centre includes clinical, radiological and histopathological steps as well as the subsequent interdisciplinary assessment in a specialised tumor board. A general practitioner, on the other hand, usually has only X-ray-based diagnostics available and, due to their incidence, statistically encounters sarcomas an average of three times in his/her professional life. As a result, sarcomas are often misdiagnosed and prognostically essential time is lost, and patients are delayed in being referred to specialised sarcoma centers. However, it is precisely the delayed initiation of therapy that has a significant impact on the prognosis of the child. While in some medical specialties (e.g., lung and breast cancer) complex data analysis using artificial intelligence has already shown promising results, the application of these methods in orthopaedic oncology is still very limited. This is due, on the one hand, to the lack of IT structures in the relevant facilities and, on the other, to the rarity of the disease. At Klinikum rechts der Isar, however, data collection has been practiced for more than 40 years, resulting in a worldwide unique data set (~10,000 sarcoma patients). Unfortunately, the current data is unstructured and the handling is not very efficient.

Tasks

- set up a working database model and integrate retrospective data
- structure data from 10,000 patients (images + tabular data)
- provide common functions (export, adding new data etc.)
- establish data visualization and analysis
- use common tools/frameworks-engines etc. such as sqlite or postgres, vega etc.
- long term goal of this project is to provide data in a suitable form for clinical studies/ AI studies
- present your results in our lab
Offer

- Get in touch with rare medical data
- Highly educated & interdisciplinary environment
- Interaction and frequent feedback from medical and computer science experts
- (workplace at our lab at Klinikum rechts der Isar – subject to reservation)

References


Contact

If you are interested, please send a brief application with CV and transcript of records to:

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