DIGITAL & IA,

ALLIES OF 21ST-CENTURY ANATOMOPATHOLOGY

The role of anatomopathology continues to evolve and gain importance. To accompany this change, digitization has become an essential step. And logically, Artificial Intelligence (AI) as well. The team from Tribun Health discusses this necessity with us.

Jean-François Pomerol
CEO
Tribun Health
Photo credit : DR

Saima Ben Hadj
VP AI and Computer Vision I Tribun Health
Photo credit : DR

ANATOMIC PATHOLOGY: AN INCREASINGLY CENTRAL ROLE

"Precision medicine starts with the precision of diagnosis." Starting from this premise, Jean-François Pomerol, CEO of Tribun Health, argues for the need to effectively equip anatomopathology laboratories. This specialty is playing an increasingly central role in the patient's healthcare journey. With the increasing number of patients, a decrease in the number of pathologists, and the discovery of new types of cancer, the need for rapid, accurate, and reliable diagnoses is strengthening.
Furthermore, the development of holistic medicine, which combines the patient's clinical, radiological, pathological, and genomic data, requires professionals to integrate multiple pieces of information. "Precision medicine, therefore, demands digitization," and AI complements the support services because "the value of the pathologist is not in counting," as emphasized by Jean-François Pomerol.

Through algorithms, it is essential to free the pathologist from time-consuming and quantitative phases, enabling them to have a comprehensive understanding of the various elements presented to them. For this reason, the company develops algorithms that assist professionals at every stage of their activity: workflow management, diagnosis, and prediction.

AI App: Mitosis by Tribun Health

Detection of mitoses for patient prognosis

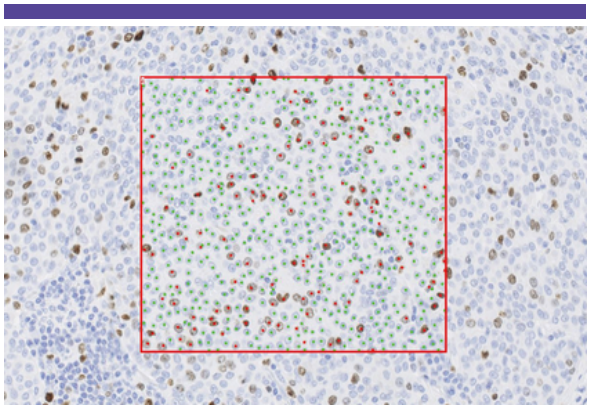

Photo credit : DR

A WIDE SPECTRUM FOR AI

For this purpose, Tribun Health has a team of 10 data scientists specialized in computer vision, focused on images. Regarding the workflow, the idea is to 'ensure that the examination reaches the pathologist's station in a state ready for analysis.' To achieve this, beforehand, the AI has analyzed the type of sample, detected the targeted organ, performed quality control on slide preparation, digitization, and labeling. It can then direct the different cases to the appropriate specialist.

Next, the AI comes into play to refine the diagnosis. In this domain, the algorithms have 'no limit': cell segmentation, counting, measurements, registration, and more. 'We significantly reduce the workload of pathologists on less complex tasks, enabling them to delve deeper into their analysis.' This approach also finds numerous applications in teleexpertise, which has widely spread since the COVID crisis, allowing obtaining expert medical advice remotely.

Finally, prediction and prognosis are also among the offered tools. 'These tools allow correlating the patient's medical history with clinical outcomes,' explains Saima Ben Hadj, Director of AI and computer vision. Our algorithms, trained on cohorts of thousands of patients for each addressed question, establish connections between images, genomic data, and clinical results, enabling the prediction of disease progression or response to targeted therapies.

A PROMISING MARKET

The company expects new opportunities. Currently, around twenty centers in France have successfully transitioned to digitization. Once this step is taken, AI quickly comes into play. "The era of digitization pioneers is behind us," observes Jean-François Pomerol. There will be an acceleration of adoption, driven by IT departments that aim to establish a comprehensive data organization in their institutions. We are witnessing a similar "boom" as in radiology 30 years ago, but within a different ecosystem, leveraging cloud technology, high-speed internet, and AI!

These prospects enable the company to set an ambitious roadmap, with the goal of covering 90% of a laboratory's activities with its artificial intelligence solutions within 3 years, partly thanks to the PortrAIt consortium project financed by BPI France. In collaboration with Owkin, Gustave Roussy, Centre Léon Bérard, Unicancer, and Cypath, the PortrAIt project aims to create approximately fifteen AI algorithms within 5 years to improve cancer diagnosis, discover new treatment biomarkers, and predict outcomes for patients in hospitals across France."

Marion BOIS

Tribun Health will be present at the SantExpo trade show at booth K-56 from May 23 to May 25, 2023. Find them in the "HIT - Information System - E-health" sector for a personalized demonstration.