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MACHINE LEARNING IN SURGERY: AN ADVANCED APPLICATION IN MEDICINE

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ABSTRACT

The machine learning is the advancement technology that can be applied in several fields. The application of machine learning in medicine is very interesting and little mentioned. Here, the authors discusses on the use of machine learning in surgery which is an actual useful application of machine learning in real life.

KEYWORDS: Machine Learning, Surgery.

INTRODUCTION

The machine learning is the advancement technology that can be applied in several fields. The application of machine learning in medicine is very interesting and little mentioned. Here, the authors discusses on the use of machine learning in surgery which is an actual useful application of machine learning in real life.

SUMMARY OF IMPORTANT REPORTS ON MACHINE LEARNING IN SURGERY

In surgery, there are some recent interesting publications on machine learning. Huff et al. reported on "The potential for machine learning algorithms to improve and reduce the cost of 3-dimensional printing for surgical planning" and concluded that "*machine learning-based segmentation of medical images could potentially improve the process of 3D anatomical modeling* [1]." At present, the applications are frequently studied and tested in neurosurgery. The important publications are shown in Table 1.

For applying of machine learning, it can help either make diagnosis or select treatment. The prediction based on machine learning is the main application. Cho et al. found that an unsupervised machine learning algorithm was comparative to surgeon diagnosis [5]. Abi-Aad et al. noted that machine Learning was a good solution for Shift during stereotactic brain surgery [6].Durand et al. found that machine learning help predict blood transfusion following adult spinal deformity surgery [7].

Table 1.Some important reports on machine learning in neurosurgery

Authors	Details
Memarian et al [2].	Memarian et al. reported on multimodal data and machine learning for surgery outcome prediction in complicated cases of mesial temporal lobe epilepsy [2].
Armañanzas et al. [3]	Armañanzas et al. reported on machine learning approach for the outcome prediction of temporal lobe epilepsy surgery [3].
Asadi et al [4].	Asadiet al. reported on machine learning for outcome prediction of acute ischemic stroke post intra-arterial therapy [4].

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