

veins, typically in the legs. If a clot dislodges and travels to the lungs, it can cause a potentially life-threatening condition known as pulmonary embolism. Shared underlying mechanisms include endothelial dysfunction, inflammation, and abnormalities in the coagulation cascade, which contribute to the development of both heart attack and DVT [1].

Several risk factors are common to both heart attack and DVT. These include advanced age, obesity, smoking, sedentary lifestyle, hypertension, diabetes, and certain genetic or acquired clotting disorders. Additionally, individuals who have undergone major surgeries or have a history of previous heart attacks or DVT are at an increased risk of developing these concurrent conditions. Understanding these shared risk factors is vital in identifying individuals who may benefit from targeted preventive measures and early interventions.

Accurate and timely diagnosis is crucial for effective management of both heart attack and DVT. Diagnostic tools such as electrocardiography (ECG), cardiac enzyme tests, imaging techniques (e.g., coronary angiography), and ultrasound-based methods (e.g., duplex ultrasonography) play a vital role in confirming the presence of a heart attack or DVT. Furthermore, specialized tests, such as D-dimer assays, can aid in ruling out DVT in individuals with suspected heart attack, and vice versa. Integrated diagnostic algorithms that consider the possibility of concurrent heart attack and DVT are essential for accurate diagnosis and appropriate treatment planning.

Preventive strategies for heart attack and DVT often overlap due to shared risk factors. Lifestyle modifications such as regular exercise, healthy diet, smoking cessation, and weight management can reduce the risk of both conditions. Medications, including antiplatelet agents, anticoagulants, and statins, are commonly prescribed to prevent clot formation and manage associated risk factors. In some cases, surgical interventions, such as percutaneous coronary intervention (PCI) or placement of inferior vena cava filters, may be necessary for individuals with a high risk of recurrent events. Multidisciplinary approaches that involve close collaboration between cardiologists, hematologists, and other specialists are vital for developing comprehensive treatment plans tailored to individual patient needs [2].

Conclusion

This mini review highlights the interconnectedness between heart attack and deep vein thrombosis, emphasizing shared mechanisms, risk factors, diagnostic approaches, prevention strategies, and treatment options. Recognizing the relationship between these conditions is crucial for timely identification, effective management, and improved patient outcomes. Further research and clinical studies are necessary to enhance our understanding of this complex relationship and develop targeted interventions that can mitigate the risk and impact of concurrent heart attack and DVT.

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THE NEUROSURGEON'S ROLE IN BRAIN-MACHINE INTERFACES

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Abstract: Brain-Machine Interfaces (BMIs) have emerged as groundbreaking technologies that bridge the gap between the human brain and external devices. Neurosurgeons play a crucial role in the development, implementation, and clinical application of BMIs. This mini report explores the significant contributions of neurosurgeons in advancing BMIs, including their involvement in surgical procedures, electrode implantation techniques, and patient care. It examines

the challenges faced by neurosurgeons and the ethical considerations surrounding BMIs. Furthermore, the mini report highlights the potential of BMIs to revolutionize neurosurgical practice and improve the lives of patients with neurological disorders.

Key words: Brain-Machine Interfaces, neurosurgeons, neurosurgery, electrode implantation, patient care, neurological disorders.

Introduction

Brain-Machine Interfaces (BMIs) represent a revolutionary field at the intersection of neuroscience, engineering, and computer science. These interfaces establish direct communication between the human brain and external devices, enabling individuals to control prosthetic limbs, communicate, and regain lost functionalities. Neurosurgeons, with their intricate knowledge of the brain's anatomy and surgical expertise, play a vital role in the development and implementation of BMIs. This mini report explores the multifaceted involvement of neurosurgeons in BMIs, highlighting their contributions, challenges, and the potential impact on neurosurgical practice [1].

Results and discussion

Neurosurgeons are instrumental in the surgical procedures required for the implantation of electrodes within the brain. They possess the expertise to navigate delicate brain structures and ensure precise electrode placement, which is crucial for accurate neural recordings and stimulation. Neurosurgeons collaborate closely with neuroscientists, engineers, and other specialists to develop minimally invasive techniques that maximize the safety and efficacy of electrode implantation. Their expertise in neuroanatomy and surgical skills contribute to the success of BMIs and lay the foundation for groundbreaking advancements in the field [2].

Neurosurgeons play a pivotal role in the comprehensive care of patients undergoing BMI procedures. They assess patient eligibility, provide pre-operative evaluations, and offer post-operative care to ensure optimal outcomes. Collaborating with interdisciplinary teams, including neurologists, physical therapists, and psychologists, neurosurgeons contribute to the development of tailored rehabilitation programs. By closely monitoring patients' progress, they help optimize BMI settings, adapt treatment plans, and address potential complications. Neurosurgeons also act as the primary interface between patients and research teams, facilitating ongoing advancements and refining BMI technologies based on patient feedback [3].

The development and implementation of BMIs present neurosurgeons with unique challenges and ethical considerations. Surgical interventions involving the brain carry inherent risks, necessitating meticulous planning, patient selection, and risk-benefit assessments. Ethical considerations include patient autonomy, informed consent, privacy, and the responsible use of emerging technologies. Neurosurgeons must navigate these challenges while upholding the highest standards of patient care, informed by ongoing research, ethical guidelines, and regulatory frameworks.

The integration of BMIs into neurosurgical practice holds immense promise for improving the lives of individuals with neurological disorders. BMIs offer opportunities for neurosurgeons to expand the boundaries of their field, enabling the restoration of motor function, communication, and cognition in patients with conditions such as paralysis, stroke, and neurodegenerative diseases. As BMIs continue to advance, neurosurgeons will play an increasingly vital role in refining surgical techniques, optimizing electrode implantation, and expanding the range of neurological conditions that can be addressed through BMI interventions.

Conclusion

The role of neurosurgeons in Brain-Machine Interfaces is critical for advancing the field and translating scientific discoveries into clinical practice. Their expertise in surgical procedures, electrode implantation, patient care, and collaboration with multidisciplinary teams is pivotal in harnessing the potential of BMIs to improve the lives of individuals with neurological disorders. By navigating the challenges and addressing ethical considerations, neurosurgeons are at the forefront of a transformative era in neurosurgical practice, where BMIs have the potential to provide innovative solutions and restore lost functionalities to those in need.

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PROPOSALS TO ADDRESS ISSUES WITH YEMEN'S HEALTHCARE SYSTEM [MINI REVIEW]

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Abstract: Yemen's healthcare system has faced numerous challenges in recent years, including armed conflicts, political instability, and economic crises. These issues have severely influenced the quality and accessibility of healthcare services, leaving the population vulnerable to a wide range of health risks. This mini review examines key proposals to address the issues plaguing Yemen's healthcare system. It explores strategies such as strengthening primary healthcare, enhancing healthcare infrastructure, ensuring healthcare workforce sustainability, and improving healthcare financing. By implementing these proposals, Yemen can take significant steps towards rebuilding its healthcare system and providing essential healthcare services to its population.

Key words: Yemen, healthcare system, armed conflicts, primary healthcare, healthcare infrastructure, healthcare workforce, healthcare financing.

Introduction

Yemen's healthcare system has been significantly impacted by armed conflicts, political instability, and economic challenges, leading to a deterioration in the quality and accessibility of healthcare services. This mini review aims to present proposals for addressing the issues faced by Yemen's healthcare system. By focusing on strengthening primary healthcare, enhancing healthcare infrastructure, ensuring healthcare workforce sustainability, and improving healthcare financing, Yemen can work towards rebuilding its healthcare system and improving the health outcomes of its population [1].

Results and discussion

One crucial proposal is to prioritize and strengthen primary healthcare services in Yemen. This includes establishing and expanding primary healthcare centers in rural and remote areas, ensuring access to essential healthcare services, preventive care, and health education. Investing in primary healthcare can alleviate the burden on secondary and tertiary care facilities, promote early detection and management of diseases, and improve overall population health [2].

Yemen's healthcare infrastructure has suffered significant damage due to armed conflicts. Rebuilding and upgrading healthcare facilities, including hospitals, clinics, and diagnostic centers, is crucial to ensure the provision of quality healthcare services. Investments should focus on equipping facilities with necessary medical equipment, ensuring a continuous supply of essential medications, and implementing robust information systems for efficient healthcare management.

The conflict in Yemen has resulted in a significant exodus of healthcare professionals, leading to a severe shortage of skilled personnel. A proposal to address this issue is to implement initiatives that attract and retain healthcare professionals, such as offering competitive salaries, providing professional development opportunities, and ensuring a safe working environment. Collaborating with international organizations and establishing partnerships with foreign healthcare institutions can facilitate knowledge exchange and capacity-building programs [3].

Yemen's healthcare financing system requires substantial reforms to ensure sustainable