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EFFECTIVENESS OF USING INJECTORS AND SALINE ON MRI IMAGE RESULTS

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ABSTRACT

The use of Magnetic Resonance Imaging (MRI) technology with contrast media has become a standard in the world of medical diagnostics to obtain more accurate and detailed images of the body. However, the effectiveness of MRI image results does not only depend on the contrast medium. The use of injectors and saline before, during, and after the MRI imaging process plays an important role in improving the quality of the resulting images. This community service activity aims to provide education and training regarding the importance of injectors and saline in MRI procedures to medical personnel in various hospitals and clinics. Through counseling, workshops and live demonstrations, it is hoped that medical personnel can understand and apply these techniques effectively, so as to improve the accuracy of diagnosis and the quality of health services. The results of this activity show an increase in the understanding and skills of medical personnel in the use of injectors and saline, which contributes positively to the quality of MRI images and patient diagnosis results.

Keywords: abstract; magnetic resonance imaging; injector; saline; contrast media.

Introduction

Community service is a form of commitment from academics and practitioners in making a real contribution to improving the quality of life in society. In the health sector, especially medical imaging, technological advances continue to develop to provide more accurate diagnoses and better treatments. One

technology that plays a very important role in this is Magnetic Resonance Imaging (MRI).

The use of contrast media in MRI procedures has been widely recognized as an effective method for increasing the clarity and detail of the resulting images. However, the use of contrast media alone is not enough to achieve optimal results. The use of appropriate injectors and saline before, during, and after imaging

procedures plays a crucial role in maximizing the quality of the images obtained.

Research and clinical experience show that a combination of contrast media and an injector and saline protocol can provide significant improvements in image quality. This not only helps in more accurate diagnosis but also in more effective therapy planning and evaluation.

Therefore, this community service with the title "Effectiveness of Using Injectors and Saline on MRI Image Results" aims to provide education to medical personnel and the public about the importance of using injectors and saline in MRI procedures. Through this activity, it is hoped that understanding and applying this technique can improve the quality of health services and patient diagnosis in various health facilities.

Methods

This community service aims to increase the understanding and skills of medical personnel in order to improve the quality of the image results. The program will involve a series of educational and practical activities designed to ensure correct and effective application of the technique.

This activity will use four stages, namely the first stage is preparation, the second is implementation, the third is documentation and publication, and the last is follow-up.

Results and Discussion

From the results obtained, it can be seen that the use of injectors and saline in the MRI procedure has a significant positive impact. The following is a further discussion regarding these results:

Better Image Quality:

Improved image quality allows doctors to see anatomical structures and pathological conditions more clearly. This makes it easier to make more accurate and faster diagnoses, which ultimately improves the quality of patient care.

Procedure Efficiency:

More efficient time in carrying out MRI procedures allows hospitals to serve more patients at the same time. This is a huge advantage, especially in hospitals with high patient volumes and long wait times for MRI exams.

Patient Safety:

Reducing the risk of side effects is a very important aspect of medical procedures. By minimizing risks through the use of saline, patient safety can be guaranteed, increasing patient confidence in the procedures being carried out.

Improving Medical Personnel Performance:

Positive feedback from medical personnel suggests that better technology and protocols can improve performance and job satisfaction. This also means that training and implementation of new technologies must be a focus in efforts to improve health care.

Overall, this community service shows that the use of injectors and saline in MRI procedures is not only effective in improving image quality, but also provides many additional benefits that support overall health service improvements. Thus, recommendations for widespread implementation of this technology in various healthcare facilities are strongly recommended.

The use of contrast in an MRI examination can help clarify images of organs or body tissues that are difficult to see on ordinary MRI images. By using contrast media, doctors can differentiate between normal tissue and tissue affected by disease or disorders. In addition, the use of saline after contrast medium injection can also help improve image quality by providing contrast to tissues that are difficult to see on regular MRI images. In conclusion, an MRI examination using contrast media using an injector works by injecting contrast media into the patient's body through the blood vessels in the arm. The use of injectors can help improve the accuracy and efficiency of examinations by delivering the right dose, improving image quality, and increasing patient safety.



the image results can be improved, besides that saline injection can also improve patient safety.

References

1. Suhardi, Budi WS, Anam C. Upaya Peningkatan Kualitas Citra MRI dengan Pemberian Media Kontras. Berk Fis. 2013;16(1):9-14. {
2. Sejarah Rumah Sakit Umum Pusat Dr. Kariadi. https://id.wikipedia.org/wiki/Rumah_Sakit_Umum_Pusat_Dokter_Kariadi Diakses pada tanggal 30 Oktober 2023 pukul 16.00.
3. Profil Rumah Sakit Umum Pusat Dr. Kariadi. <https://www.rskariadi.co.id/page/162/Profil-Kami/Profil> Diakses pada tanggal 30 Oktober 2023 pukul 16.00
4. Lee, C. H., & Suh, C. H. (2019). The impact of saline flush technique on MRI image quality and diagnostic performance. *Journal of Clinical Imaging Science*, 9, 45.
5. European Society of Radiology (ESR). (2011). Guidelines on contrast media usage in MRI. *Insights into Imaging*, 2(2), 121-132.

Conclusion

Automated contrast media injectors provide safety, accuracy and improved patient image quality. Additionally, the use of an injector can also help improve image quality by administering saline after injection of the contrast medium, which improves imaging quality. The use of saline should be done after contrast medium injection, with saline injection