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First experience in international teleconsultation in cardiovascular pathology

Remote consultation via e-mail can be used for so-called store-and-forward telemedicine. The pathologist is in a position to make maximum use of the potential of Internet for transmitting both texts and images from one end of the globe to the other. The authors present their experiences in international telepathology consulting services in the field of cardiovascular pathology by the e-mail, the first one in Clinical Center of Serbia. The captured image files were attached to e-mail messages, which contained patients' information and sent through the Internet to the Department of Pathology, Thoraxklinik, Heidelberg, Germany, for telepathology consultation and interpretation. The authors present positive results of the first international telepathology consultation by ordinary e-mail between Serbia and Germany.

KEY WORDS: Telepathology; Remote Consultation; Referral and Consultation; Leiomyoma; Aortic Diseases

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INTRODUCTION

Telepathology uses telecommunication technologies to transfer images, clinical and anamnestic data, to specialized centers particularly for teleconsultation and continuous education. Remote consultation via e-mail can be used for so-called store-and-forward telemedicine. The pathologist is in a position to make maximum use of the potential of Internet for transmitting both texts and images from one end of the globe to the other. The authors present their experiences in international telepathology consulting services in the field of cardiovascular pathology by the e-mail, the first one in Clinical Center of Serbia.

CASE REPORT

Case 1.

A 46-years old man with clinical diagnosis: "Aneurysm of the ascending aorta" (Ascending aortic aneurysm). Surgical specimen is a part of the wall of the ascending aorta. Serial sections of the aortal tissue were stained: Figure 1. H&E, 16x10; Figure 2. Masson trichrome, 25x10; and Figure 3. elastin Van Gieson, 25x10. Histological diagnosis: Aortal cystic medial necrosis.



Figure 1. Aortal cystic medial necrosis, H&E, 16x10

Histological appearance:

There is a considerable fragmentation and disruption of elastic fibers in the media of the aorta, particularly in areas of mucoïd degeneration. A large basophilic pool of mucoïd material disrupts the medial layer.

Case 2.

A 36 years old woman. Clinical diagnosis: "Metastasis of abdominal tumor into the heart". Plugs of the tumour extend as far as inferior vein cava and even grows into the right atrium.

The first episode was seven years ago presented with large

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intraabdominal tumor and ascites. Following were abdominal salpingoectomy. The previous histological diagnosis was not documented because the patient is a refugee, but during seven years after the surgery the patient was well. Recently, she was admitted at the Institute of cardiovascular disease Clinical Center of Serbia with moderate tricuspid failure.

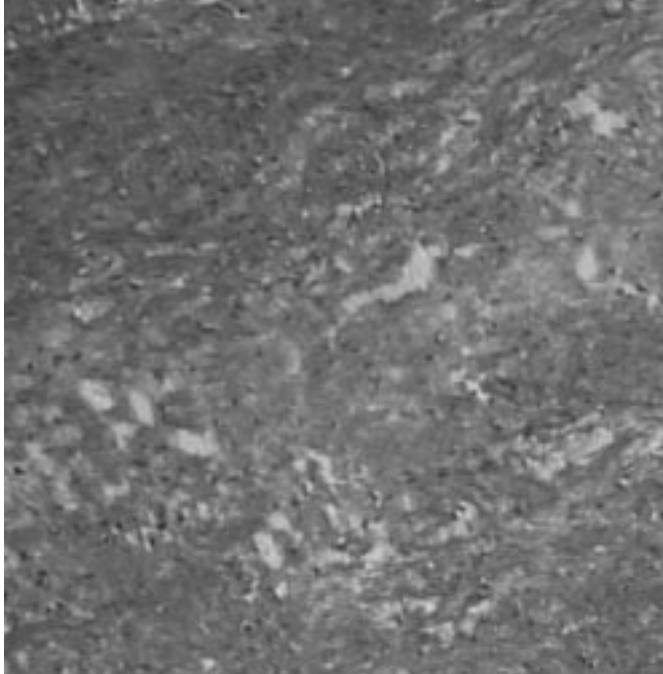


Figure 2. Aortal cystic medial necrosis, masson trichrome, 25x10

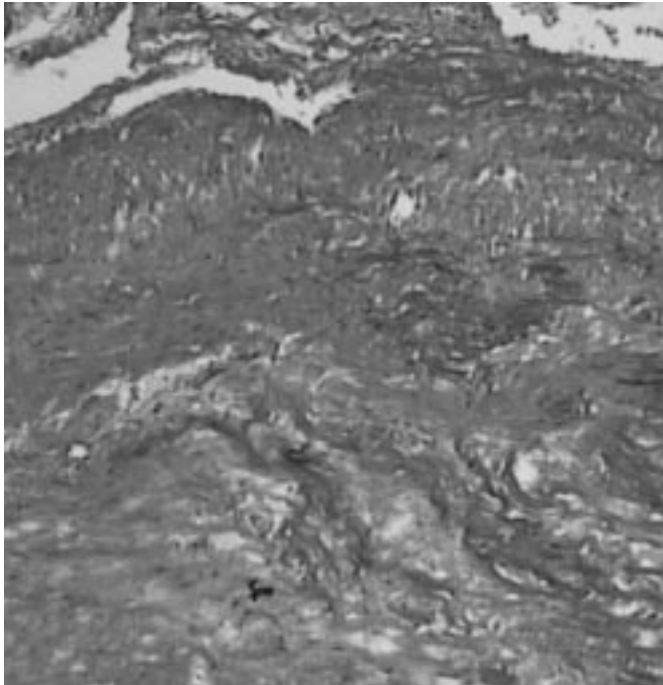


Figure 3. Aortal cystic medial necrosis, elastin van Gieson, 25x10

Tissue of the tumor found at this time in the right atrium (248 gr. 20x5x5 cm) was prepared for pathohistology and immunohistochemistry markers for light microscopy analysis: Figure 4. H&E, 16x10; Figure 5. Myoglobin +, 25x10; Figure 6. Desmin+,

25x10; S-100 +/- . Histological diagnosis: Benign metastasizing leiomyoma. (Leiomyomatosis peritonealis disseminata)

Histological examination revealed that the tumor was composed of interlaced bundles of smooth muscle tissue intermixed with fibrous tissue and with a variety of degenerative changes, hyaline changes, and calcification, myxoid degeneration and patchy necrosis.

Immunostains for myoglobin and desmin were positive, but for S-100 was slightly positive.

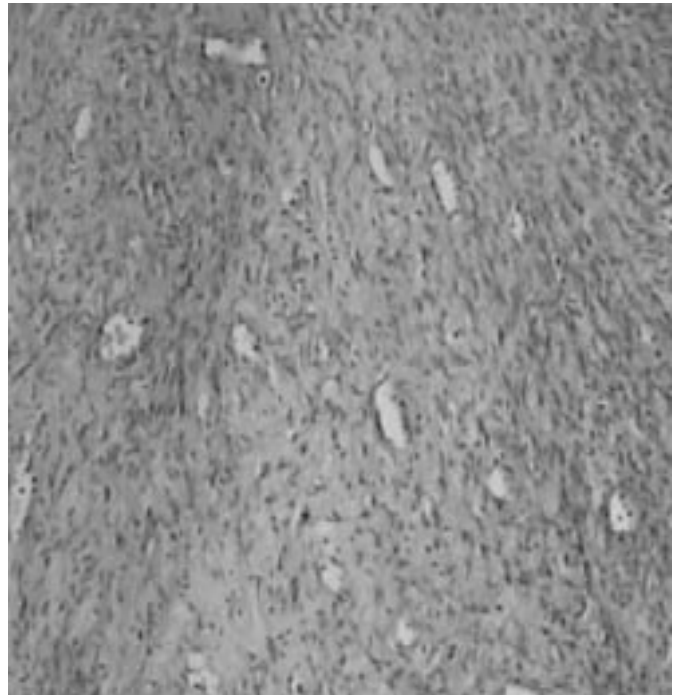


Figure 4. Benign metastasizing leiomyoma, H&E, 16x10

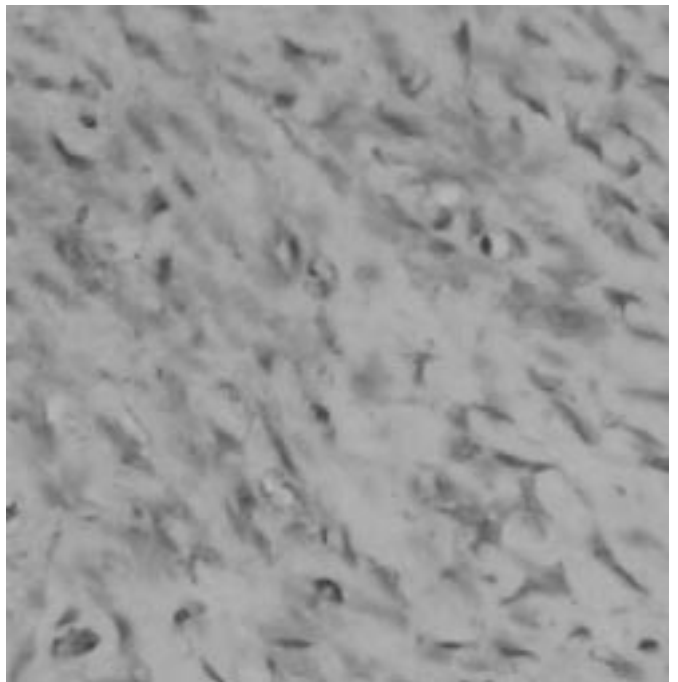


Figure 5. Benign metastasizing leiomyoma, myoglobin +, 25x10

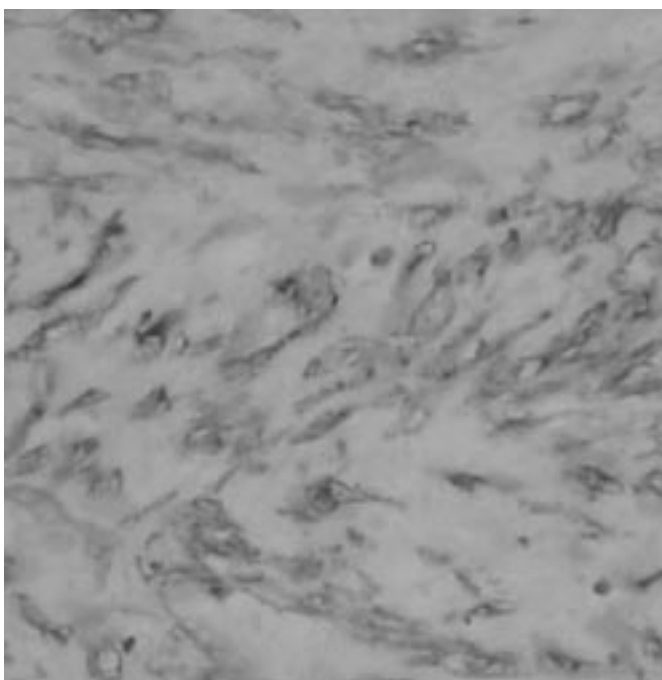


Figure 6. Benign metastasizing leiomyoma, desmin +, 25x10

MATERIALS AND METHODS

The selected histological images of two cases (H&E, elastin Van Gieson, Masson trichrome and immunostains) at various levels of resolution were prepared in the Department of Pathology of the Institute of cardiovascular diseases of Clinical Center of Serbia. The colored images were prepared in the Department of Pathology of Clinical Center "Bežanijska Kosa" by CCD color video camera installed on a LEICA Q500win system for image analysis. The captured image files were converted into compressed JPEG format and ten (4+6) images attached to e-mail messages, which contained patients' information and sent through the Internet to the Department of Pathology, Thoraxklinik, Heidelberg, Germany, for telepathology consultation and interpretation.

RESULTS

In our cases telepathology consultation by ordinary e-mail was useful and successful. No additional images were requested. There was diagnostic concordance between original and telepathological main diagnosis.

CONCLUSION

Our first results recognize the usefulness of international telepathology consultation by e-mail. HIV infection.

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