Ultrasound / Interview report

Clinical usefulness and future prospects of ApliCam in rheumatoid arthritis

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Introduction

Hokkaido Medical Center for Rheumatic Diseases (located in Sapporo City, Hokkaido) is one of the leading medical facilities in Japan specializing in the care of patients with rheumatoid arthritis. The center has a number of advanced diagnostic imaging systems, including CT and MRI as well as ultrasound, and is involved in all phases of clinical care from initial consultation to inpatient treatment and long-term rehabilitation. The center's physiological examination room uses three diagnostic ultrasound systems, including Aplio i700 and Aplio a, to perform about 20 to 25 ultrasound examinations a day.

Clinical expectations for ApliCam

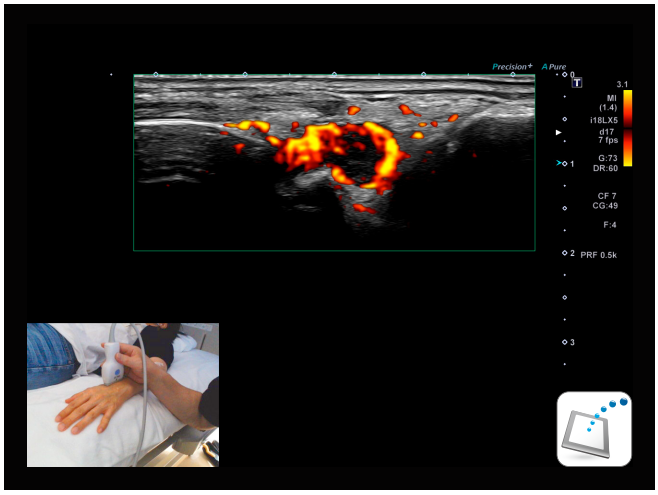
Recently, a new function known as ApliCam has been introduced by Canon. This function allows dynamic images obtained by a webcam to be recorded in real time and displayed together with ultrasound images acquired using Aplio i-series / Prism Edition or Aplio a-series systems. The webcam images are combined with the ultrasound images using a picture-in-picture display format. Because Hokkaido Medical Center for Rheumatic Diseases has just started to utilize ApliCam in clinical practice, we arranged an interview with Mr. Akihiro Narita, Vice Director of the Technology Section of the Treatment Department. He kindly agreed to describe his clinical experience with ApliCam and discuss his future expectations for this new function.

About 70% of the patients visiting our examination room have rheumatoid arthritis. Because most of our patients complain of joint pain or swelling, we scan a number of joints and enter the results into a scoring system together with comments specifying the anatomical location of each image. This method is really time-consuming because we need to interrupt the examination and freeze the images in order to manually enter these comments. If the need to perform manual entry could be eliminated by using ApliCam, this would be a significant workflow improvement.

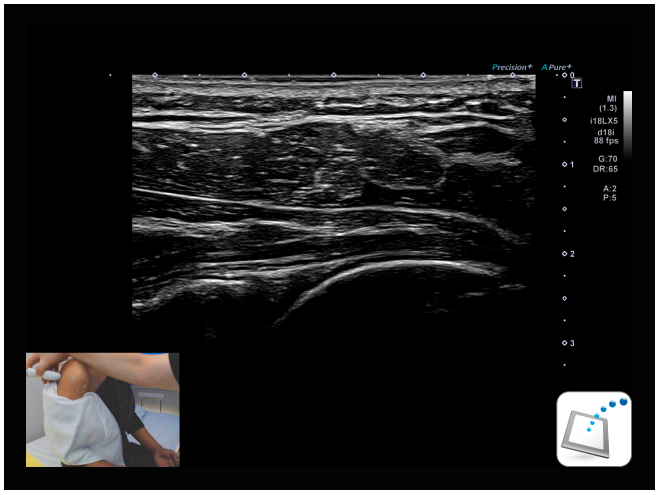
Clinical experience with ApliCam

By carefully positioning the webcam to display the entire region of interest before starting the examination, operators can focus their attention on the examination. After image freeze, playback of the image captured by the webcam starts in synchronization with cine loop playback of the ultrasound images. Unlike our previous examination method, the anatomical locations being examined can be recorded effortlessly, without the need to manually enter comments. In other words, examinations can be performed much more quickly and easily. In addition, when performing examinations of joints such as the shoulder in which operators need to carefully maneuver the transducer while acquiring images, ApliCam can be expected to give the interpreting physicians a clearer understanding of the angle of the transducer, which is impossible to indicate precisely using a simple body mark.

Finally, it may also be possible to record clinical findings such as redness of the skin or swelling using the images captured by ApliCam together with the ultrasound images, without the need to set up a separate digital camera.



Severe inflammation of the wrist joint



Dynamic examination of the right shoulder

Tips for using ApliCam most effectively

Due to the low light levels commonly utilized in ultrasound examination rooms, a small lamp to light the viewing area can provide more detailed, brighter webcam images. The ApliCam images can be small on thumbnails and when selecting images to be pasted into electronic medical records, care is needed to appropriately adjust the size and position of the webcam images to ensure that the anatomical locations are clearly visible.

Summary

The introduction of ApliCam has greatly improved workflow in our physiological examination room. It has not only made our work easier, but also made it easier for the interpreting physicians to identify the anatomical location being examined by viewing a single image. This means that the same information can be shared between the examination room and the consultation room, resulting in a substantial reduction in the total time required.

ApliCam is also very useful for case presentations in daily medical conferences at hospitals as well as for clinical lectures at academic meetings because it provides more detailed information. We have already found it to be an indispensable tool and expect it to be of even greater clinical value in the future.

Staff members in the physiological examination room

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Results may vary due to clinical setting, patient presentation and other factors.

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