D72 Body Packing as a Forensic and Radiological Challenge: Sensitivity, Specifity, and Accuracy in Detection of Cocaine Drug Containers by Different Modalities

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After attending this presentation, attendees will be able to tell which modality is best for radiological detection of body packs. The difference of body packing, stuffing, or pushing will be elaborated and the varying appearance of the packs in CT and conventional imaging will be demonstrated. Furthering the necessity of a tight collaboration of the custody ward, the forensic institute and the radiology department will be shown.

This presentation will impact the forensic science community by raising awareness of the difficulties in ante mortem imaging of body packers and the organizational problems in custody wards and the upcoming medicolegal issues.

Purpose: The goal of this study was to investigate the diagnostic value of unenhanced multidetector CT (MDCT), plain radiographs and statscan imaging of the abdomen for detection of concealed cocaine – filled packs in the alimentary tract of human transporters.

Materials and methods: Thirty two suspects of drug body packing (29m, 3f, mean age 27y, range 16-45 y) underwent radiological imaging: MDCT (n=14), plain radiograph (n=26) and Lodox (n=8). A total of 57 examinations were investigated (15 MDCTs, 32 plain x-rays, 10 Lodox) whereas some patients had more than one exam, according to clinical or forensic indication. The images were assessed retrospectively by investigators without special training or experience in reading images of drug carriers. Radiological findings were compared with listed evidence in the feces of each detained suspect. Sensitivity, specificity and accuracy for drug concealment were calculated for each modality.

Results: Cocaine-filled containers could be detected in 19 out of 32 patients. Twenty-eight examinations were true positive and nine false negative, whereas 19 were correctly identified as negative, and one was read as false positive. Lodox showed a sensitivity of 57%, specifity of 100 % and accuracy of 70%; plain radiographs 76%, 90%, 81% and
MDCT 88%, 100%, 93%, respectively.

Conclusion: MDCT imaging showed the highest diagnostic accuracy and sensitivity in verification of body packing. Based on this fast disposable and reliable result of MDCT and the usually limited space at custody wards, forensic and of course medical issues do lead to an increasing number of (judicial warranted, if needed) MDCT examinations during the last years. Still there is the problem of radiation dose that could be addressed by the application of low-dose protocols for the suspect's benefit. Obviously, the radiologist needs to be well schooled in the appearance of the drug containers in order to diagnose those correctly – therefore a tight collaboration with the custody ward, the associated forensic institute and the radiology department is desirable.

Body Packer, Radiology, Cocaine

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