

Case 7

Follow-up of Pediatric Patient With Lymphoma – Enhanced Diagnostic Confidence With *syngo* CT Oncology

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HISTORY

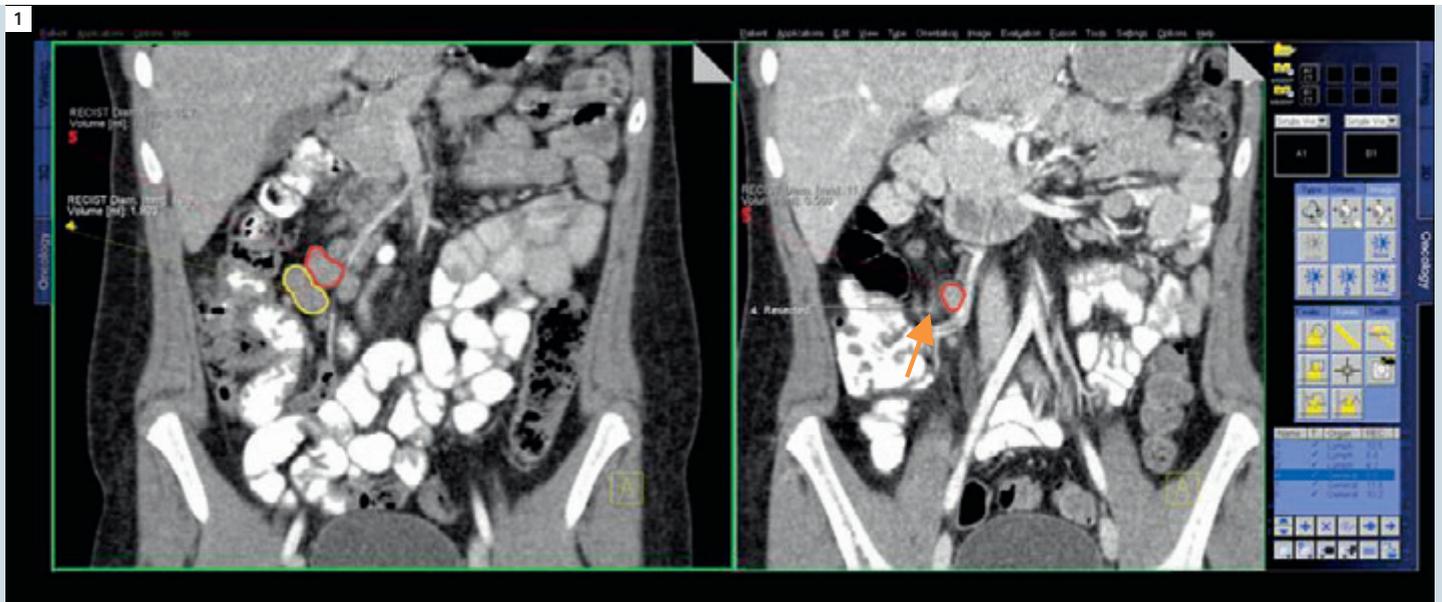
A 7-year-old patient was referred to the University Pediatric Clinic after presenting with unexplained chronic fatigue. The patient was diagnosed with a stage IVb Hodgkin Lymphoma and underwent chemo and radiation therapy. Following treatment, residual lymph nodes in the para-cecal and para-aortal regions remained.

DIAGNOSIS

At the initial 15-month follow-up scan, evaluation of target cecal lymph nodes indicated a slight increase in the size of target lesions. A diagnostic laparoscopy and lymph node biopsy was performed. The histopathology was negative. At the next 4-month follow-up exam, correlation and evaluation of target lymph nodes reading only the axial images proved challenging due to the removal of some lymph nodes (Fig. 1), and moreover, due to the mobile-nature lymph nodes in the abdominal region. Addition-

ally, the previous CT images were acquired during expiration, while current images were acquired during inspiration, leading to a considerable displacement of target lymph nodes. This is not an unusual situation, particularly when scanning young children or other low compliance patients.

Using *syngo* CT Oncology, we were able to register the two exams and automatically propagate all target lesions to the follow-up exam. Due to the precise registration it was relatively easy to confirm



1 Target lesion 4 had been resected at biopsy (arrow).

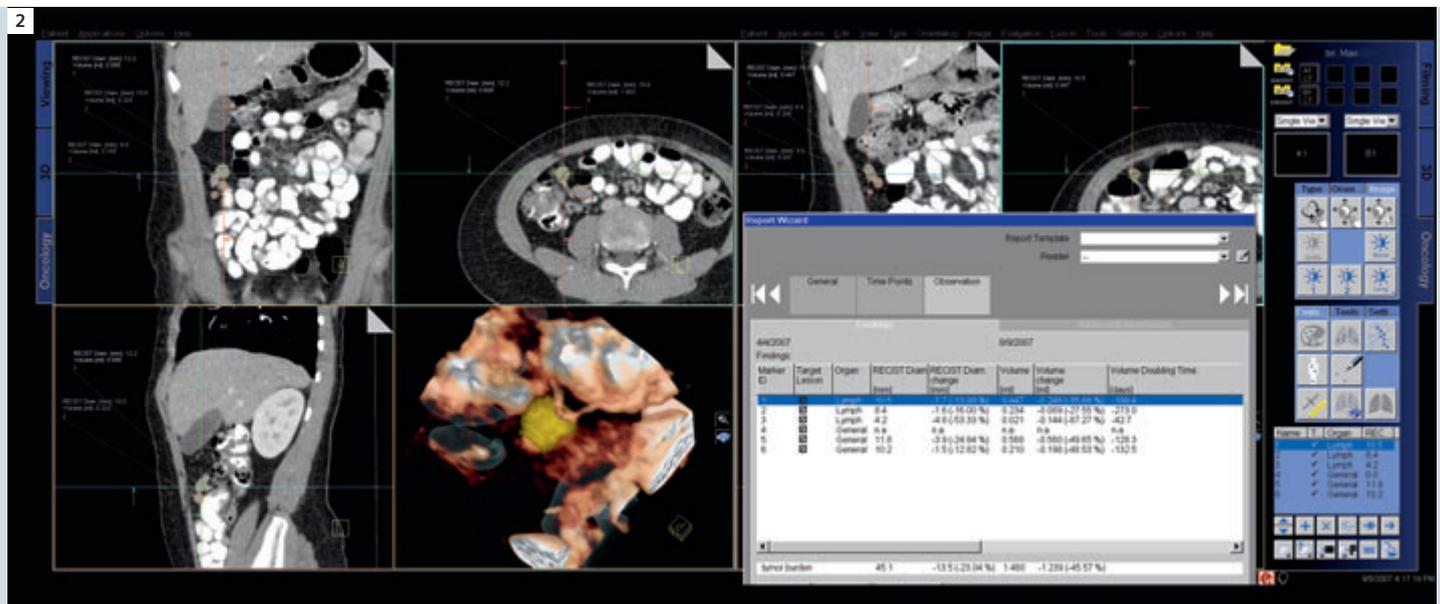
matching target lesions, even in clusters. Calculation of the percentage change in size of the lesions was automatically calculated by the software. Overall, assessment of target lesions revealed a -23 percent (RECIST) change in total tumor burden (Fig. 2) demonstrating that there was no progression, which correlated with the negative histopathology results.

COMMENTS

Having access to software that supports routine diagnostic oncology workflow with automated tools that facilitate precise alignment, plus calculation of tumor size and growth, provides increased diagnostic confidence that is particularly appreciated in sensitive pediatric cases like this.

EXAMINATION PROTOCOL

Scanner	<i>SOMATOM Sensation 64-slice configuration</i>
Scan area	<i>Thorax Abdomen</i>
Scan length	<i>500 mm</i>
Scan time	<i>11 s</i>
Scan direction	<i>cranio-caudal</i>
Tube voltage	<i>120 kV</i>
Tube current	<i>80 eff. mAs</i>
Rotation time	<i>0.5 s</i>
Slice collimation	<i>0.6 mm</i>
Slice width	<i>1.0 mm</i>
Pitch	<i>1.2</i>
Reconstruction increment	<i>0.8</i>
Kernel	<i>B41f/B70f</i>
Postprocessing	<i>syngo CT Oncology</i>



2 Overall, the total tumor burden has remained constant indicating that there has been no disease progression in the 19 months since treatment, comparing initial examination (left) with last follow-up.