PET/MR Technique and Clinical Cases

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Future is Now: PET/MRI

1st in Children’s Hospital in North America!!
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What is a PET/MRI?

PET

PET/CT

PET/MRI
TCH Philips Body PET Protocols

PET/CT
- FDG Uptake (60 min)
- PET (25 min)
- 1 hr 25 min

MR/PET
- FDG Uptake (45 min)
- PET
- MRI (45 min)

PET/MR
- FDG Uptake
- PET

Siemens

GE
- MR/PET
- FDG Uptake
PET/CT vs PET/MR Radiation Exposure: TCH Experience

<table>
<thead>
<tr>
<th>Imaging Exam</th>
<th>Total Scan Dose (mSv)</th>
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<tbody>
<tr>
<td>PET/CT (Low Dose CT)</td>
<td>11-21</td>
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<tr>
<td>PET/CT (High Dose, Diagnostic CT)</td>
<td>17.2</td>
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<tr>
<td>PET/MR</td>
<td>6-11 (45% less than PET/CT)</td>
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<tr>
<td>PET/CT + Additional Diagnostic CT</td>
<td>16-31</td>
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<tr>
<td>PET/MR + Additional Diagnostic CT</td>
<td>11-21</td>
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</table>
13 yo female with Takayasu Arteritis

1/2012

2/2015
3 yo female with shunted hydrocephalus and medically intractable epilepsy
Subependymal gray matter heterotopia

Posterior White Matter Volume Loss
17 yo Female with Hodgkins Lymphoma
Which Study is from the PET/MR?

PET/MR

PET/CT
18yo male with B-cell Lymphoma, off-therapy for 32 months

Treatment complicated by disseminated candidiasis and transfusion-related hemosiderosis
PET/MR: Evaluate for residual candidiasis

PET NAC

PET AC