

17th Working Groups Meeting of the Scandinavian Sarcoma Group November 28-29, 2011 Copenhagen

Protocol from the Imaging Subcommittee

Present: Marina Assarsson (Umeå), Mats Geijer (Lund), Svein Halvorsen (Bergen), Anne Grethe Jurik (Århus), Arne Lücke (Århus), Mikael Skorpil (Stockholm), Maja Sloth (Lund), Jörgen Strinnholm (Umeå), Boel Söderén (Stockholm) and Ingeborg Taksdal (Oslo).

Conjoint meeting with the Orthopaedics Surgery Group

- *New referral guidelines for suspected soft tissue tumours*

Sarcoma referral data from Lund (Emelie Styring) and Oslo (Olga Zaikova) was presented. The rate of sarcoma referral to these Orthopaedic Sarcoma Centra and the rate of pre-referral CT/MRI was high. Data from Oslo on referred subcutaneous lipomatous tumours showed an extremely high rate of benign tumours (lipoma). Although the diagnostic value of MRI in evaluating benign fat tumours is very high, the referral guidelines should be easy. As the referral sarcoma rate is high, it was decided not to change the guidelines for referral of soft tissue tumours at this meeting. The Orthopaedics Surgery Group will propose an update of referral guidelines in due time for a decision to be made at the Working Groups Meeting next year.

Imaging subcommittee meeting

- *Guidelines for basic MRI examination of suspected bone and soft tissue tumors*

These guidelines will be displayed and openly accessible via SSG's homepage. Due to convincing MRI data in differentiating benign from malignant fat-containing tumours, a renewed discussion concerning this topic is planned within the Imaging Group on next year's meeting. A potential review article on this subject for *Läkartidningen* and similar journals in the other Nordic countries will be discussed as well.

- *Presentation and discussion of interesting cases from participants of the Imaging Group*

There was a fruitful presentation, discussion and share of experience of different cases from the participants. The cases presented were chondromyxoid fibroma, osteoid osteoma, high-grade surface osteosarcoma, conventional osteosarcoma, multifocal metaphyseal osteosarcoma, dedifferentiated chondrosarcoma, osteblastoma and radiation induced chondrosarcoma.

Cases of multifocal metaphyseal osteosarcoma was noted to recently have occurred in Århus, Umeå and possibly in Lund. At the SSG joint meeting on 29th of November these data were presented to the Morphology/Pathology Group. As there is still uncertainty if this entity is "synchronous tumours" or metastases from a primary tumour, maybe an analysis of the pathology specimens could shed some light on this issue. If there is interest, the Pathology Group could contact the Imaging Group.

- *Discussion topics - The value of MRI diffusion in tumour orthopaedic imaging*

One study was presented (Khoo 2011 - Diffusion-weighted imaging in musculoskeletal MRI - a critical review) with its conclusions: “*Differentiation between benign and malignant vertebral fractures and monitoring of therapy response have shown excellent results. However, in other pathologies DWI data have been inconclusive in some cases, contributing little additional information beyond that gained from conventional MR sequences.*”

Århus Hospital are using a whole-body MRI protocol and will complement it with a diffusion sequence (DWIBS). On next year’s meeting they will present their experience, as the group’s experience so far is low. Possibly will Umeå Hospital also have a short presentation on their experience from whole-body MRI.

The Århus whole-body MRI protocol consists of coronal STIR and T1, and an axial T2FATSAT sequences, which in total requires about 1 hour and 15 minutes.

- *Discussion topics - The value of dual source CT in tumour orthopaedic imaging*

Two studies were presented (Coursey 2010 - Dual-energy multidetector CT - how does it work and Bamberg 2011 - Metal artifact reduction by dual energy computed tomography using monoenergetic extrapolation). The CT technique extrapolates beam hardening artifacts and its potential to evaluate bone and soft tissue close to metal was discussed. Lund Hospital has recently invested in such a CT machine and on next year’s working committee meeting they will present their experience.

- *Discussion topics - Evaluation and signs of secondary tumour involvement of joints*

Discussion concerning this subject, as it is often difficult. Some data have shown that pre-operative MRI can be falsely positive in 50%. The most common pattern is growth along the bone surface and peripherally around the articular cartilage margin under the joint capsular insertions and synovial attachment. The second pattern is invasion into the osseous-tendinous junction of the intracapsular-extrasynovial cruciate ligaments (knee). The least and rare, is direct penetration into articular cartilage at the the osteochondral junction.

- *Discussion topics - Primary intraarticular malignant tumours*

The very low incidence was discussed and also the possibility for a study to evaluate if there are any signs differentiating these tumours from the more common benign findings.

- *Sclerotherapy of aneurysmal bone cysts - Experiences from Karolinska Hospital*

Data was presented showing that treatment of ABC with repeated injections of polidocanol (aethoxysklerol) is easy, inexpensive, effective and safe. It is especially valuable in treatment of ABC in pelvis and sacrum.

It was also mentioned that in the literature fibrosing agents (Ethibloc) have been used that have had severe, even fatal complications.

Other questions

- *Post-operative tumour follow-up – MRI sequences*

Follow-up protocol to evaluate recurrent tumour was just briefly discussed.

- *Standard MRI sequences of knee – sarcoma visualization*

Ingeborg Taksdal presented preliminary data from a retrospective study on sarcoma visualization in conventional MRI knee examinations. Standard sequences for joint imaging depicted the tumours when present within the displayed field of view, but were often inadequate for accurate evaluation and conventional x-ray was seldom performed.

- *Discussion about raising the awareness about sarcomas in general practitioners and other health care workers.*

Ingeborg Taksdal reported about a recently established patients' society for sarcoma patients in Norway and about the project "Store Kuledagen" arranged at Radiumhospitalet. It would be valuable to share web links from our respective home pages in the different countries.

Interesting sites in Norway:

www.oncolex.no

www.sarkom.no (upstart phase)

- *Evaluation of desmoid tumours' response to therapy within studies*

This was briefly discussed. CT should in most cases not be used and even MRI is often difficult due to the tumours' irregular and infiltrative growth pattern. Evaluation according to RECIST criteria may be impossible. The CT/PET experience is low, but the uptake prior to therapy can be low, making it difficult for response evaluation.

- *Imaging Group participants will suggest non-SSG participants to contact SSG for membership and SSG participants to inform SSG if they still want to be members and update their email in the SSG email list.*

- *Anne Grethe Jurik gave an interesting talk and presentation on Mafucci's syndrome.*

Mikael Skorpil,
Chairman, Imaging Subcommittee, Scandinavian Sarcoma Group

Protocol checked by Ingeborg Taksdal