



Patients with Soft Tissue Sarcomas of the Limbs: Who treats them?

NCIN/UKACR Conference
14th June 2012

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Overview

- Background
- What the Improving Outcomes Guidance for patients with bone and soft tissue sarcoma states about treatment
- Where patients with soft tissue sarcomas of the limbs are being treated
- How treatment referral patterns have changed over 10 years

Soft Tissue Sarcomas

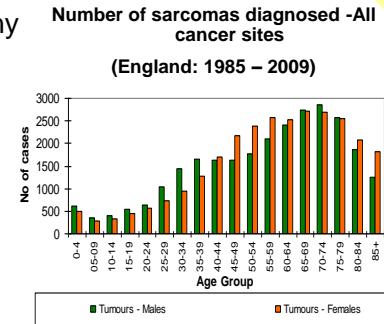


- Extremely rare
 - ❖ Around 2,800 diagnoses annually in England
 - ❖ Approximately 1% of all malignancies diagnosed
- Over 100 different types
 - ❖ Sarcoma, NOS
 - ❖ Leiomyosarcoma
 - ❖ Liposarcoma
- Can arise within any anatomical site
 - ❖ Limbs, gynaecological, retroperitoneum, head and neck
 - ❖ Any connective tissue including tissue within the organs

Soft Tissue Sarcomas



- Affect patients within any age group
- Most common in the elderly
- Can arise in children
 - Rhabdomyosarcomas
 - Ewings sarcoma and pNET





Identifying limb sarcomas

- Limb sarcomas registered with ICD-10 codes
 - C49.1 Connective and soft tissue of upper limb
 - C49.2 Connective and soft tissue of lower limb
- Where a morphology code relating to sarcoma is present
 - One of 123 morphology codes identified



Limb Sarcomas

- Most common diagnoses:
 - Sarcoma; NOS (24%)
 - Leiomyosarcoma (16%)
 - Fibromyxosarcoma (9%)
 - Liposarcoma; NOS (8%)
 - Synovial sarcoma (8%)



Treatment: What the Improving Outcomes Guidance (IOG) states

- *All patients with a confirmed diagnosis of bone or soft tissue sarcoma should have their care supervised by or in conjunction with a sarcoma MDT*
 - *Except children with certain soft tissue tumours*
- *Patients should undergo definitive resection of their sarcoma by a surgeon who is a member of a sarcoma MDT which treats 100 or more cases p.a.....*



Why this is important

- Many types of sarcoma are chemotherapy insensitive
 - Surgery is the only mode of treatment
 - Best practice in high caseload centres

Specialist Centres Where are they?



Central Manchester & Manchester Childrens (Oswestry)	Bone & Soft Tissue
Nuffield Orthopaedic Centre	Bone & Soft Tissue
Royal Orthopaedic Hospital NHS Foundation Trust	Bone & Soft Tissue
The Newcastle Upon Tyne Hospitals NHS Foundation Trust	Bone & Soft Tissue
University College London Hospitals	Bone & Soft Tissue
Hull and East Yorkshire Hospitals NHS Trust	Soft Tissue
Leeds Teaching Hospitals NHS Trust	Soft Tissue
North Bristol NHS Trust	Soft Tissue
Nottingham University Hospitals NHS Trust	Soft Tissue
Plymouth Hospitals NHS Trust	Soft Tissue
Royal Devon & Exeter NHS Foundation Trust	Soft Tissue
Royal Liverpool and Broadgreen University Hospitals NHS Trust	Soft Tissue
Sheffield Teaching Hospitals NHS Foundation Trust	Soft Tissue
The Royal Marsden	Soft Tissue
University Hospitals Birmingham Foundation Trust	Soft Tissue

- 5 centres treat both bone and soft tissue tumours

.....also Diagnostic Clinics



- There are also another 20 diagnostic clinics around the country

e.g.

- Lancashire Teaching Hospitals NHS Foundation Trust
- Heart of England NHS Foundation Trust
- Leicester Royal Infirmary
- Norfolk and Norwich University Hospitals NHS Foundation Trust

Purpose: to provide specialist help on sarcomas for GP's
generic information on sarcoma



Where are patients with soft tissue sarcomas treated surgically?

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Method

- Approximately 5,400 limb sarcomas diagnosed
 - England 2000 – 2009
 - 21% of all sarcomas
- Tumour details extracted from NCDR and linked to HES
 - NHS number, date of birth, postcode and sex
- HES records were limited
 - 9 months prior to diagnosis
 - 12 months post diagnosis with sarcoma
- HES records evaluated for surgical resection of tumours
 - Utilising OPCS4 classification

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Surgical treatment of limb sarcomas



- Depends on the tumour
 - Excision of skin
 - Radical hindquarter/forequarter amputation
- Identifying surgery to treat the tumour is complex
- Each operation field in HES evaluated for surgery which could relate to excision of sarcoma
- Most common operation codes
 - Excision of lesion of soft tissue NEC
 - Unspecified other excision of lesion of skin
 - Wide excision of muscle

Most common operation codes



- Excision of lesion of soft tissue NEC
 - These operations relate to the underlying sarcoma
- Unspecified other excision of lesion of skin
 - Sarcoma or non-melanoma skin cancer?
- Wide excision of muscle
 - Sarcoma or random operation?

Validating OPCS4 surgical codes



- Operations validated against OPCS-Z site codes present within the operation fields

e.g.

- Operation 1 “Unspecified other Excision of Lesion of skin”
- Operation 2 “Skin of arm”

- Further validations

- Compare NCDR diagnosis dates with HES admission dates

- Thorough validation checks undertaken

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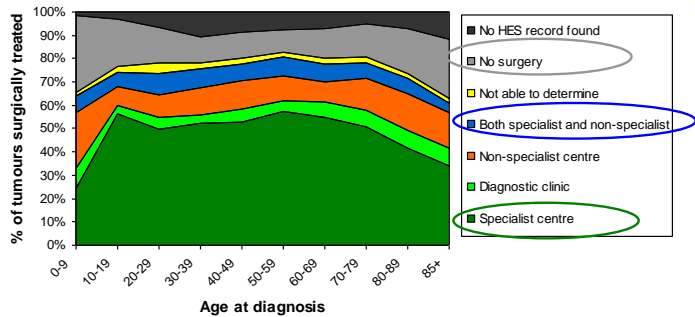
Location of treatments identified



● Specialist centre only	51% (2,735)
● Diagnostic clinic	6% (326)
● Non-specialist centre only	12% (652)
● Both non-specialist centre and specialist centre (inadvertent surgical treatment!)	7% (383)
● Not able to determine – whether treatment related to sarcoma (i.e excision of skin and no site given)	3% (136)
● No surgery relating to sarcoma recorded	14% (777)
● No HES record for patient	7% (394)

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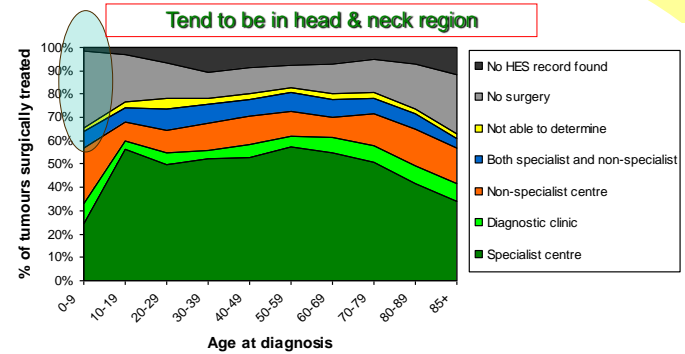
Results



- Only 50% of patients referred directly to specialist centre for surgery
- 20% of patients did not receive any surgical treatment
- Around 10% inadvertently excised (Whoops!)

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Results



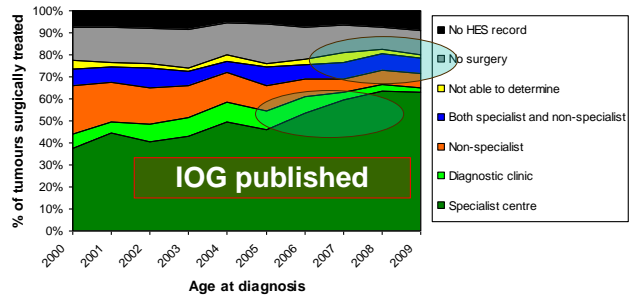
- Higher proportion of patients aged 0-9 years do not have surgery
- Chemotherapy is the principal treatment for Ewing's, rhabdomyosarcomas and STS in children

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Only 50% referred to specialist centres



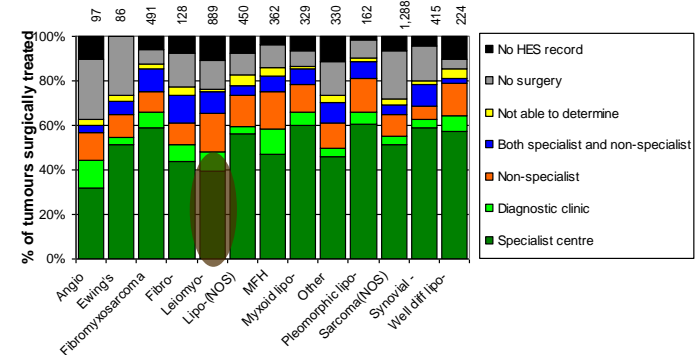
- Did this improve between 2000 and 2009?



- Significant improvement in referrals for surgery
 - <38% in 2000 to ~60% in 2009
 - Still a similar proportion of inadvertent procedures

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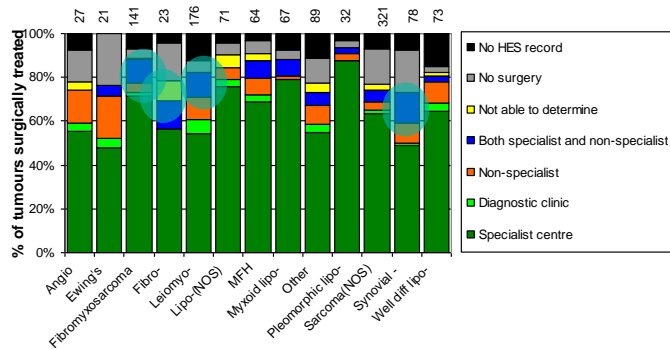
How do these rates vary by histological sub-type?



- Only 40% (351) leiomyosarcomas were surgically treated in specialist centres

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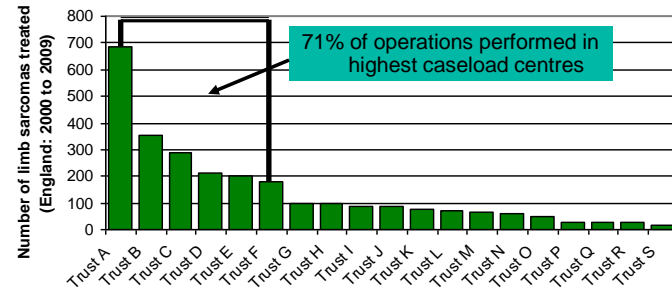
What is the picture in 2009?



- 63% of patients referred to a specialist centre for surgical treatment
- Most likely inadvertent procedures: fibromyxosarcoma, fibrosarcoma, leiomyosarcoma and synovial sarcoma

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Specialist centre caseload



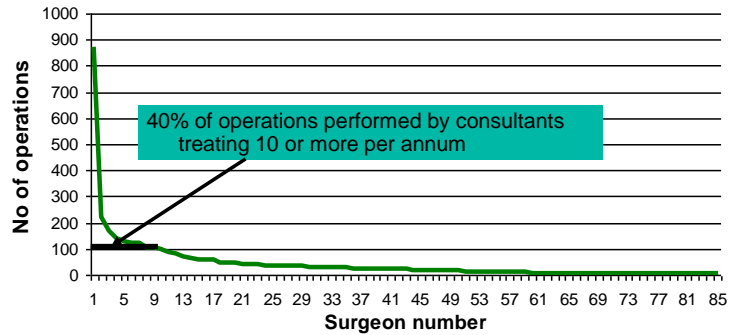
- These analyses relate to limb sarcomas only
 - (20% of all sarcomas diagnosed)
 - Deflate true number of sarcoma patients treated
- Only patients normally resident in England

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Consultant caseload

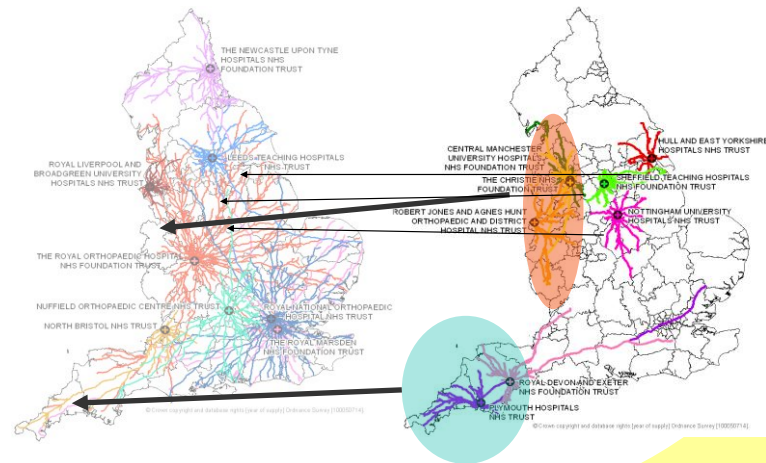


- Surgeons performing 5 or more operations between 2000 and 2009



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Highest Caseload treatment centres



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Further Analyses Required

- Multivariate analyses
 - To determine which factor(s) is/are most significant
- Amputation rates outside of specialist centres
 - Are these still happening?
- What care is provided where surgical treatment does not happen?
- NCIN routes to diagnosis work
 - Where are the inefficiencies in referrals

Conclusions

- Admissions to specialist centres for surgical treatment are increasing
 - Patients with upper limb sarcomas less likely to be referred to a specialist centre
 - Inadvertent surgery still around 5 – 10%
- Staging data essential
 - Important factor explaining why patients may not receive surgery
- We do not have MDT data
 - It is impossible to establish if patients were discussed in sarcoma MDT
 - Surgery commissioned from other Trusts

Thank You!



Questions?