Audit

Metastatic bone disease – the orthopaedic workload

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Background: In 1999, the British Association of Surgical Oncology (BASO) published its guidelines for the management of metastatic bone disease in breast cancer in the UK, highlighting the role of the orthopaedic surgeon as an integral part of the multidisciplinary team.

Aim: To establish the workload to our department of metastatic bone disease.

Methods: A prospective study was performed over a 6-month period aiming to study factors affecting length of stay, whether BASO recommendations were being adhered to for metastatic breast disease and whether BASO recommendations could be extended to other forms of metastatic bone disease.

Results: 36 patients were referred to the orthopaedic department during the study period. The majority of the patients were referred as emergencies, 83% of patients were seen by an orthopaedic consultant on the day of referral but only 27% were seen by the orthopaedic cancer liaison consultant. Only 16 patients required a therapeutic operative intervention and length of in-patient stay was increased by not having a known primary carcinoma at admission. Patients with bone metastases discussed at the breast cancer multidisciplinary meeting were also studied as were patients with bone metastases presenting to the oncology service. It was found that there was little overlap between these groups and our study group.

Conclusions: Metastatic bone disease does form a workload to the orthopaedic department and BASO recommendations are generally followed for breast disease. The BASO recommendations could be extended to other tumours; however, it should be recognised that there is a significant workload involved and a need for sufficient resources to allow a high quality and timely service.

Key words: Metastatic bone disease – Orthopaedic workload – BASO guidelines

The incidence of metastatic bone disease is difficult to determine accurately but it is estimated to occur in around two-thirds of patients with cancer and this is around 20,000 patients per year.

In 1999, the British Association of Surgical Oncology (BASO) published its guidelines for the management of metastatic bone disease in breast cancer in the UK, highlighting the role of the orthopaedic surgeon as an integral part of the multidisciplinary team. BASO recommended: (i) that each orthopaedic department should

have a named consultant for the management of breast cancer patients with bony metastases; (ii) for attendance at regular multidisciplinary meetings; and (iii) for liaison with other departments (e.g. spinal surgery).

In this study, we wished to establish: (i) the workload to our department of metastatic bone disease, including factors affecting length of stay; (ii) whether BASO recommendations were being adhered to for metastatic breast disease; and (iii) whether BASO recommendations could be extended to other forms of metastatic bone disease.

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Figure 1 Referral source.

New Cross Hospital is a large district general hospital and is a sub-regional cancer centre serving a population of around one million. There is a designated orthopaedic surgeon for metastatic bone disease.

Patients and Methods

This was a prospective study over a 6-month period. Data were collected from three sources: (i) patients referred to the orthopaedic department; (ii) patients discussed at the multidisciplinary breast meeting; and (iii) the oncology unit database.

Results

In all, 36 patients with metastatic bone disease were referred to the orthopaedic department during the 6-month study period. Complete data for analysis was available for 30 of these patients who formed the group for study. A further 18 patients were discussed at the multidisciplinary breast

Figure 3 Primary malignancy.

Figure 2 Time from referral to review by orthopaedic consultant.

cancer meeting. There were 1119 new referrals to the oncology unit during the study period of whom 40 patients had bony metastases.

There was little overlap between these groups with the oncology department rarely requiring an orthopaedic opinion and the patients discussed at the multidisciplinary breast meeting rarely needing intervention.

The average age of the patients referred to the orthopaedic unit was 66 years of whom 22 were female and 14 male.

Figure 1 shows the referral source with the majority of patients being referred acutely from the accident and emergency department.

The majority of patients were seen by a consultant orthopaedic surgeon on the day of referral (Fig. 2); however, only 27% of patients were seen by the orthopaedic cancer liaison consultant.

Figure 3 demonstrates the range of primary malignancies. Only 16 patients required a therapeutic operative intervention; 4 further patients required an open biopsy for diagnostic purposes (Fig. 4).

Figure 4 Procedures performed.

Length of hospital stay was also examined, with the overall average in the study group being 12 days.

In the group of patents ($n = 22$) in which the lead clinician was a non-orthopaedic surgeon (e.g. haematologist), the length of stay was just 9.7 days; these patients had a primary diagnosis prior to referral to the orthopaedic department. In the group with no previous known primary ($n = 8$) under the care of the orthopaedic department alone, the length of stay was 18.4 days.

Similarly, those patients who had investigations performed by the specialist teams (e.g. chest physician investigating bronchial carcinoma), the length of stay was 8.2 days as compared with those patients having all investigations solely by the orthopaedic department.

Discussion

The prognosis for patients with bone metastases has significantly improved in recent years, due mainly to advances in systemic therapies. This has been most marked in breast and prostate cancer. In the UK, 9000 women with breast cancer will develop bone metastases each year and up to one-fifth of these women are alive at 8 years, often requiring repeated palliative procedures.¹

The aims of surgery are to relieve pain and restore function. The fixation should provide immediate stability. The surgeon should assume that the fracture will not unite and fixation should aim to last the life-time of the patient.²

O'Donoghue *et al.*³ showed that amongst women with bone metastases from breast cancer, when clinical review by an Orthopaedic surgeon would have been appropriate, it was requested in less than 50% of cases.

This study shows that patients with metastatic bone disease form an orthopaedic workload both in investigations, operative management and in-patient stay. However, the actual numbers requiring operative intervention are small.

Orthopaedic workload is predominantly in the form of investigations particularly in those patients with no previously diagnosed primary and, therefore, no cancer specialist to act as lead clinician. This is reflected in the data for in-patient stay.

The BASO guidelines for bone metastases in breast cancer outline the type of multidisciplinary approach

which is needed. There is a designated orthopaedic cancer liaison consultant who attends the weekly breast cancer multidisciplinary meeting, along with breast surgeons, plastic surgeon, oncologists, radiotherapists, radiologist and pathologists. Few patients discussed at this meeting needed orthopaedic intervention.

Of the patients in the study group, over 80% were seen by a consultant on the day of the referral; however, only 27% were seen by the designated orthopaedic cancer liaison consultant. This was because this consultant did not have a sessional commitment or protected theatre time, so acute referrals needed to be managed by the on-call team.

The multidisciplinary approach that BASO suggests for the management of metastatic bone disease in breast cancer could also be employed for other primary tumours commonly metastasising to bone. A wide range of different primary sources of bone metastases was seen in this study, making it unworkable for the orthopaedic cancer liaison consultant to attend all the various speciality multidisciplinary meetings.

The post of orthopaedic cancer liaison consultant should ideally have sessional commitment for the assessment and operative treatment of patients with metastatic bone disease and attendance at relevant multidisciplinary meetings.

Conclusions

Metastatic bone disease does form a workload to the orthopaedic department and BASO recommendations are generally followed for breast disease. The BASO recommendations could be extended to other tumours; however, it should be recognised that there is a significant workload involved and a need for sufficient resources to allow a high quality and timely service.

References

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