

Multiple Myeloma screening in an Integrated MSK service: Are cases at risk of being missed?

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Background

Myeloma accounts for 2% of all cancers diagnosed annually in the UK, comprising approximately 4800 new diagnoses per year with most patients continuing to experience a delay of 6 months or more in their diagnosis^{1, 2}. Given the improved treatability of myeloma, earlier diagnosis than is currently achieved is thus desirable to improve survival rates further³⁻⁵. To accomplish this, recognition of myeloma-associated symptoms sooner is necessary to allow for more prompt investigation; considering that the most frequently seen presentation of myeloma is bone pain, typically localised to the back, the role of regional musculoskeletal services in myeloma diagnosis is self-evident.

This study audited the NICE guidelines for patients presenting to a regional integrated musculoskeletal service with persistent back pain suspicious of myeloma, namely: *'Arrange a full blood count, serum calcium, and plasma viscosity or erythrocyte sedimentation rate (ESR) for people over 60 years of age with persistent bone pain, particularly back pain, or unexplained fracture'*⁶.

Method

- ❖ Patient information for all patients aged 60 and over presenting with back pain to a regional MSK service over a 6-month period from 01/07/2016 to 01/01/2017 was collected.
- ❖ Those with features of persistent back pain, more explicitly defined using back-pain criteria associated with myeloma, as identified from previous studies (see Table I), were identified and their care records examined to determine whether the necessary investigations were conducted.
- ❖ Care records for all patients diagnosed with myeloma during the period 01/07/2016-01/01/2017 in the NHS Trust being studied were also examined to determine whether there had been consultation with the MSK service at any time between the service's creation in October 2015 and the date of myeloma diagnosis.

Table I: Criteria for back pain⁷⁻¹⁰

<input type="checkbox"/> Has been present for greater than 4 weeks
<input type="checkbox"/> Is non-improving with time
<input type="checkbox"/> Is not relieved by rest or non-prescription analgesia (i.e. paracetamol, ibuprofen)
<input type="checkbox"/> Is present when supine
<input type="checkbox"/> Wakes the patient from sleep

Results

- ❖ 648 patients presented to the MSK service with back pain in the defined period.
- ❖ 38 of these satisfied the criteria for myeloma-associated back pain and had not been previously investigated, 5.86% of the total.
- ❖ Within this group of 38 patients, none had been referred for the first-line laboratory investigations recommended by NICE; 2 patients were referred for MRI scanning which, although performed with MSK pathology in mind rather than myeloma, is included in the guidelines for diagnosing myeloma.
- ❖ The remaining patients were treated with physio; 12 were not followed-up in any way following this, 31.58% of the total
- ❖ None of the 8 patients diagnosed with myeloma in the period of the study had previously seen MSK services.

Table II: Patient data summary

		% of total
Patients satisfying inclusion criteria	38	5.86
Sufficient investigation	2	0.31
Excluded patients	610	94.14
Incorrectly recorded diagnosis	115	17.75
Insufficient notes	79	12.19
Prior investigations for myeloma	7	1.08
Symptom criteria not met	409	63.12
TOTAL	648	

Discussion

The results demonstrate the potential for cases of myeloma to be missed or the diagnosis delayed. Considering the low investigation rate of 5.26% for myeloma-suspicious back pain and the absence of any investigation referrals specifically querying myeloma, there is clearly capacity for improvement in regional MSK services when investigating such presentations. The current approach of prescribing physiotherapy, without follow-up in 31.58% of cases, seems to indicate a 'specialty bias' in which MSK pathologies are considered at the exclusion of all others, presenting a risk of such other causes being overlooked. Although this is perhaps understandable given most patients consulting with MSK services will have an MSK cause to their problem, it would nevertheless be an error to assume that all MSK problems are strictly MSK in origin. Necessarily, other causes such as myeloma must be excluded first.

The absence of any prior consultation with the MSK service before diagnosis for those 8 patients diagnosed with myeloma during the study period is reassuring in demonstrating that no diagnoses have been missed thus far, however in view of the low investigation rates and number of suspicious back pain cases not being followed up, this can be perhaps considered fortunate.

Recommendations

- ❖ Those 38 patients identified as having back pain with myeloma-suspicious features should be followed-up and investigated if their pain still fulfils the criteria described in Table I; this is particularly important for those 12 patients not followed-up initially.
- ❖ The implementation of a myeloma-back pain screening tool, designed using information from previous assessment tools and studies, should occur as soon as possible, with a validity assessment of this occurring with the re-audit of the guidelines 1 year from the conclusion of this study⁷⁻¹².

References

1. Cancer Research UK [Internet]. Myeloma statistics. 2017 [cited 15 March 2017]. Available from: <http://www.cancerresearchuk.org/health-professional/cancer-statistics/statistics-by-cancer-type/myeloma/>
2. Myeloma UK [Internet]. Symptoms and complications. [Cited 15 March 2017]. Available from: <https://www.myeloma.org.uk/information/symptoms-and-complications/>
3. GP-Update [Internet]. Myeloma. [Cited 15 March 2017]. Available from: https://www.gp-update.co.uk/files/docs/Multiple_myeloma.pdf
4. Rollig C, Knop S, Bornhauser M. Multiple myeloma. *Lancet*. 2015;385(9983):2197-208.
5. Bird JM, Owen RG, D'Sa S, Snowden JA, Pratt G, Ashcroft J, et al. Guidelines for the diagnosis and management of multiple myeloma 2011. *Br J Haematol*. 2011;154(1):32-75.
6. NICE Clinical Knowledge Summaries [Internet]. Multiple Myeloma. 2016 [cited 15 March 2017]. Available from: <https://cks.nice.org.uk/multiple-myeloma#!scenario>
7. Nau KC, Lewis WD. Multiple myeloma: diagnosis and treatment. *Am Fam Physician*. 2008;78(7):853-9.
8. Myeloma UK [Internet]. Myeloma Diagnosis Pathway. [Cited 15 March 2017]. Available from: <https://www.myeloma.org.uk/wp-content/uploads/2013/09/GP-Pathway.pdf>
9. George ED, Sadovsky R. Multiple myeloma: recognition and management. *Am Fam Physician*. 1999;59(7):1885-94.
10. Coleman RE. Skeletal complications of malignancy. *Cancer*. 1997;80(8 Suppl):1588-94.
11. Jones D, Vichaya EG, Wang XS, Williams LA, Shah ND, Thomas SK, et al. Validation of the M. D. Anderson Symptom Inventory multiple myeloma module. *J Hematol Oncol*. 2013;6:13.