

Magnetic resonance imaging (MRI)

Magnetic resonance imaging (MRI) and positron emission tomography-computed tomography (PET-CT) are important imaging techniques in multiple myeloma (MM). We conducted a prospective trial in patients with MM aimed at comparing MRI and PET-CT with respect to the detection of bone lesions at diagnosis and the prognostic value of the techniques.

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ascopubs.org/doi/full/10.1200/JCO.2017.72.2975

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Multiple Myeloma

Medical Condition

Cancer of mature plasma cells in the bone marrow.

📅 **Rare** (Fewer than 200,000 cases per year in US)

🏥 Often requires lab test or imaging

👨‍⚕️ Treatment from medical professional advised

⌚ Can last several years or be lifelong

The exact cause is not known but factors like family history and exposure to radiation increase risk. Symptoms include fatigue, nausea, constipation and bone pain among others. Treatment includes medication, radiotherapy, or bone marrow transplant.

Symptoms

Some forms of multiple myeloma may be asymptomatic, but most cases show any, or all of the four characteristic symptoms. Other symptoms are most often, a consequence of these symptoms.

- **Hypercalcaemia:** Increased levels of calcium in the blood leads to extreme thirst, loss of appetite, nausea, confusion and constipation
- **Increased protein levels in the body** causes kidney damage
- **Anemia** occurs when cancer cells outnumber healthy RBCs. Anemia

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Magnetic resonance imaging (MRI)

Magnetic resonance imaging (MRI) and positron emission tomography-computed tomography (PET-CT) are important imaging techniques in multiple myeloma (MM). We conducted a prospective trial in patients with MM aimed at comparing MRI and PET-CT with respect to the detection of bone lesions at diagnosis and the prognostic value of the techniques.

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PEOPLE ALSO ASK

- How is MRI used to diagnose bone involvement in mm?
- How is bone disease used to diagnose multiple myeloma?
- Which is the most common feature of multiple myeloma?
- How are mm lesions characterized in a MRI?

Feedback

Imaging in multiple myeloma: How? When?

<https://pubmed.ncbi.nlm.nih.gov/30587527>

Magnetic resonance imaging is the gold-standard imaging modality for detection of bone marrow involvement, whereas PET/CT provides valuable prognostic data and is the preferred technique for assessment of response to therapy. Standardization of most of the techniques is ongoing. © 2019 by The American Society of Hematology.

Cited by: 22 Author: Elena Zamagni, Paola Tacchetti, Michele C...
Publish Year: 2019

Imaging in multiple myeloma: How? When? | Blood | American ...

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Feb 14, 2019 - Magnetic resonance imaging (MRI) has been established as a valuable technique for diagnosing bone involvement in MM. 24 MRI is based on examining the composition of the tissue with regard to water and fat content and has the highest sensitivity when it comes to detecting BM infiltration by myeloma cells, without radiation exposure.

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The role of positron emission tomography-computed ...

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Whole-body conventional radiography remains the gold standard in the diagnostic evaluation, but computed tomography, magnetic resonance imaging and 18F-fluorodeoxyglucose positron emission tomography are increasingly used as complementary techniques in the detection of bone lesions.

Cited by: 63 Author: Jo Caers, Nadia Wifhofs, Jens Hillengass, ...
Publish Year: 2014

Imaging in multiple myeloma: How? When? - ScienceDirect

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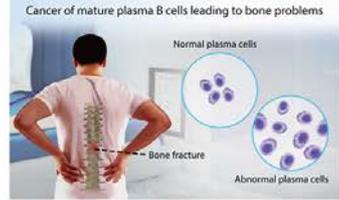
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Multiple Myeloma

Medical Condition

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Cancer of mature plasma cells in the bone marrow. This causes bone pain in chest or spine, fatigue, nausea, constipation, frequent infections, and weight loss.

Rare (Fewer than 200,000 cases per year in US)

- Often requires lab test or imaging
- Treatable by a medical professional
- Can last several years or be lifelong

The exact cause is not known but factors like family history and exposure to radiation increase risk. Symptoms include fatigue, nausea, constipation and bone pain among others. Treatment includes medication, radiotherapy, or bone marrow transplant.

Symptoms

Some forms of multiple myeloma may be asymptomatic, but most cases show any, or all of the four characteristic symptoms. Other symptoms are most often, a consequence of these symptoms.

- Hypercalcaemia: Increased levels of calcium in the blood leads to extreme thirst, loss of appetite, nausea, confusion and constipation
- Increased protein levels in the body causes kidney damage
- Anemia occurs when cancer cells outnumber healthy RBCs. Anemia causes fatigue, dizziness and irritability
- Anemia occurs when cancer cells outnumber healthy RBCs. Anemia causes fatigue, dizziness and irritability
- Bone problems: Injuries, lesions and pain in the pelvis, back and ribs
- Multiple myeloma weakens the immune system and increases susceptibility to infection.

Treatments

Treatment includes medication, radiotherapy, or bone marrow transplant.

Medication

- Chemotherapy: To kill rapidly multiplying cells, is non-specific and can also kill healthy fast-growing cells. Vincristine · Doxorubicin
- Targeted therapy: Destroys cancer cells only. Bortezomib · Carfilzomib
- Corticosteroids: To control inflammation in the body. Prednisone · Dexamethasone

Medical procedures: Bone marrow transplantation

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Name of Journal: *World Journal of Radiology*

Manuscript NO: 65757

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Imaging in multiple myeloma: **computed tomography or magnetic resonance imaging?**

Tagliafico AS *et al.* Imaging in multiple myeloma

Alberto Stefano Tagliafico

Abstract

Multiple myeloma (MM) is the second most common type of hematological disease with its incidence rising in the elderly. In MM, the extent of the bone disease increases both morbidity and mortality. The detection of lytic bone lesions on imaging, especially computerized tomography (CT) and magnetic resonance imaging (MRI) is crucial to separate asymptomatic from symptomatic MM patients even when no clinical

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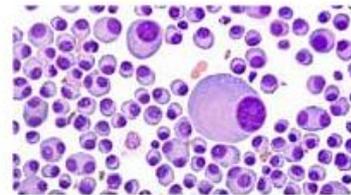
Imaging in multiple myeloma: Computed tomography or magnetic r



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Conventional radiography is less frequently recommended for use in diagnosing and tracking multiple myeloma, due to the increased efficiency of other methods such as computed tomography and magnetic resonance imaging. Small lesions that cannot be detected using conventional radiography may be seen with computed tomography (CT).



Multiple Myeloma Imaging Strategies - News | Medical

www.news-medical.net/health/Multiple-Myeloma-Imaging-Strategies.aspx

Was this helpful?

PEOPLE ALSO ASK

What kind of imaging is used for multiple myeloma? ▾

Which is better CT or MRI for multiple myeloma? ▾

What do you need to know about multiple myeloma? ▾

What are the biomarkers for multiple myeloma (MM)? ▾

Feedback

Imaging of Multiple Myeloma - PubMed

<https://pubmed.ncbi.nlm.nih.gov/31185511>

Magnetic resonance imaging is the most sensitive technique to identify bone marrow infiltration and is recommended in multiple myeloma precursor diseases. Positron emission computed tomography...

Cited by: 3

Author: Aleksander Kosmala, Thorsten Bley, Bernh...

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