

Extramedullary Plasmacytoma

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HEAD AND NECK GRAND ROUNDS

9-5-2008, Baltimore, Maryland

Plasmacytoma

- Monoclonal proliferation of plasma cells
 - Extramedullary (EMP)—tumors arising in soft tissue
 - Bone—arising in the bone
- Multiple myeloma & plasma cell leukemias: advanced forms of plasma cell malignancies

Plasmacytoma

- Solitary plasmacytomas account for 10% of plasma cell malignancies
- EMP: 3% of solitary plasmacytomas
- 4% of nonepithelial head and neck malignancies

EMP in the head and neck

- 80% of EMPS arise in the head and neck
 - Other sites: GI, lungs, testes, skin
- most common sites
 - NP
 - Paranasal sinuses
 - Nasal cavity
 - Submucosal (pharynx, larynx, oral cavity)

Table 1. The site frequency of extramedullary plasmacytoma involvement at presentation.

Site	Frequency	%
Eyelid	2	2.9
Lymph node	1	1.5
Larynx	4	5.9
Nasopharynx	11	16.2
Neck	4	5.9
Oral cavity	3	4.4
Oropharynx	13	19.1
Sinonasal	25	36.7
Sphenoid	1	1.5
Thyroid	1	1.5
Upper gum	1	1.5
Parapharyngeal space	1	1.5
Supraglottis	1	1.5

Presentation

- Median age: 55 years (*Bachar et al*: 60 years, range: 31-95, *Creach et al*: 64 years)
- Male: female 3:1

Table 2. Symptoms and signs of extramedullary plasmacytoma at presentation.

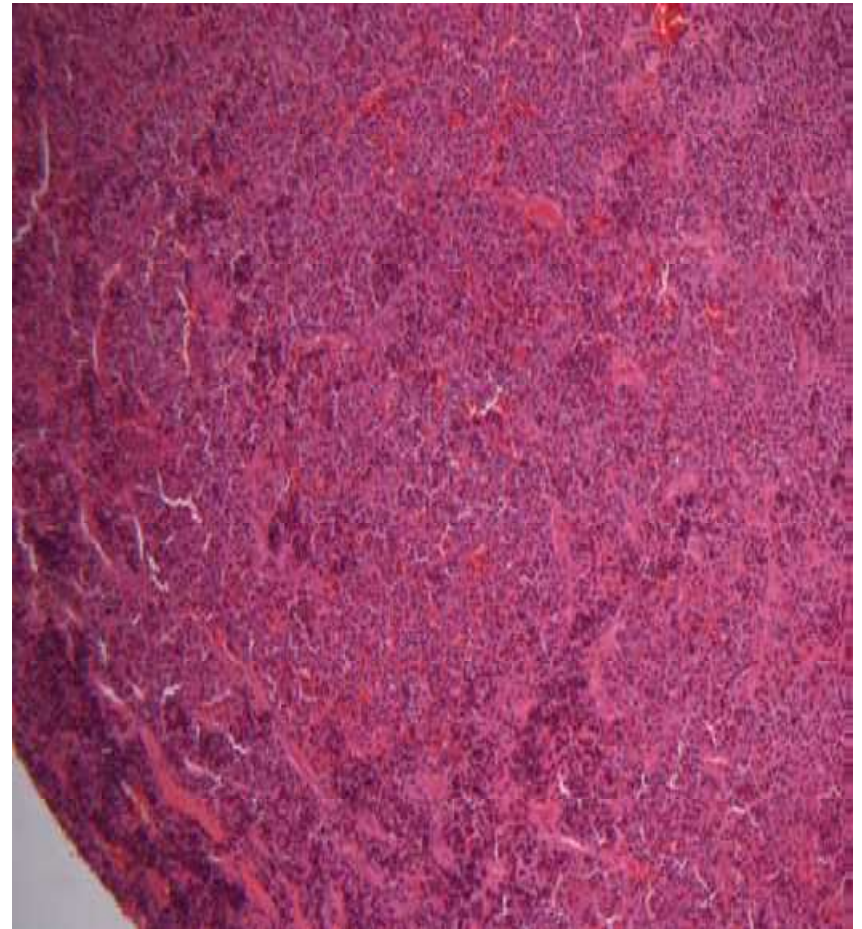
Symptoms/signs	No. of patients (%)
Nasal obstruction	23 (33)
Epistaxis	14 (20)
Neck mass	5 (7)
Persistent sore throat	4 (5)
Facial pain/headache	4 (5)
Hoarseness	4 (5)
Epiphora	3 (4)
Hearing loss	3 (4)
Weight loss	1 (1.5)

Evaluation

- Biopsy
- Morphology & immunophenotype
- Localized collection of monoclonal plasma cells without any other plasma cell proliferation

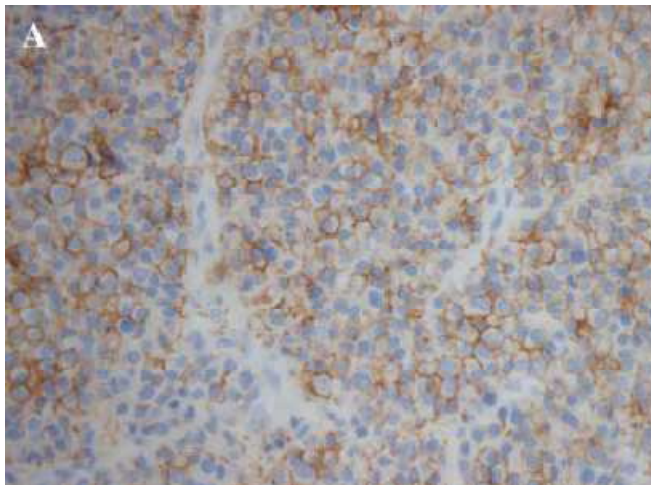
Histopathology

- dense plasma cells
- round to oval nucleus with a vesicular nuclear chromatin pattern
- nucleus is often located eccentrically in the cytoplasm (perinuclear halo)

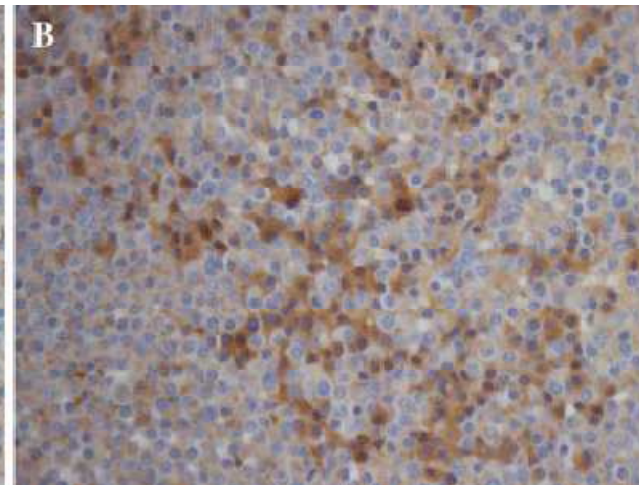


Immunohistochemistry

- CD138 and cytoplasmatic light chains of type kappa or gamma
- Negative stainings for CD20 and positive stainings for CD79 can support this



CD 138 +



Kappa light chain +

Distant disease

- Further work-up to ensure isolated
- May include abnormal monoclonal Ig (M-protein) or light chains in serum and urine:
 - Serum electrophoresis
 - Urine protein electrophoresis
- Rule out presence of plasma cells in bones
 - Normal bone marrow
 - Normal skeletal survey results

Treatment

- External beam radiotherapy 56 (80%)

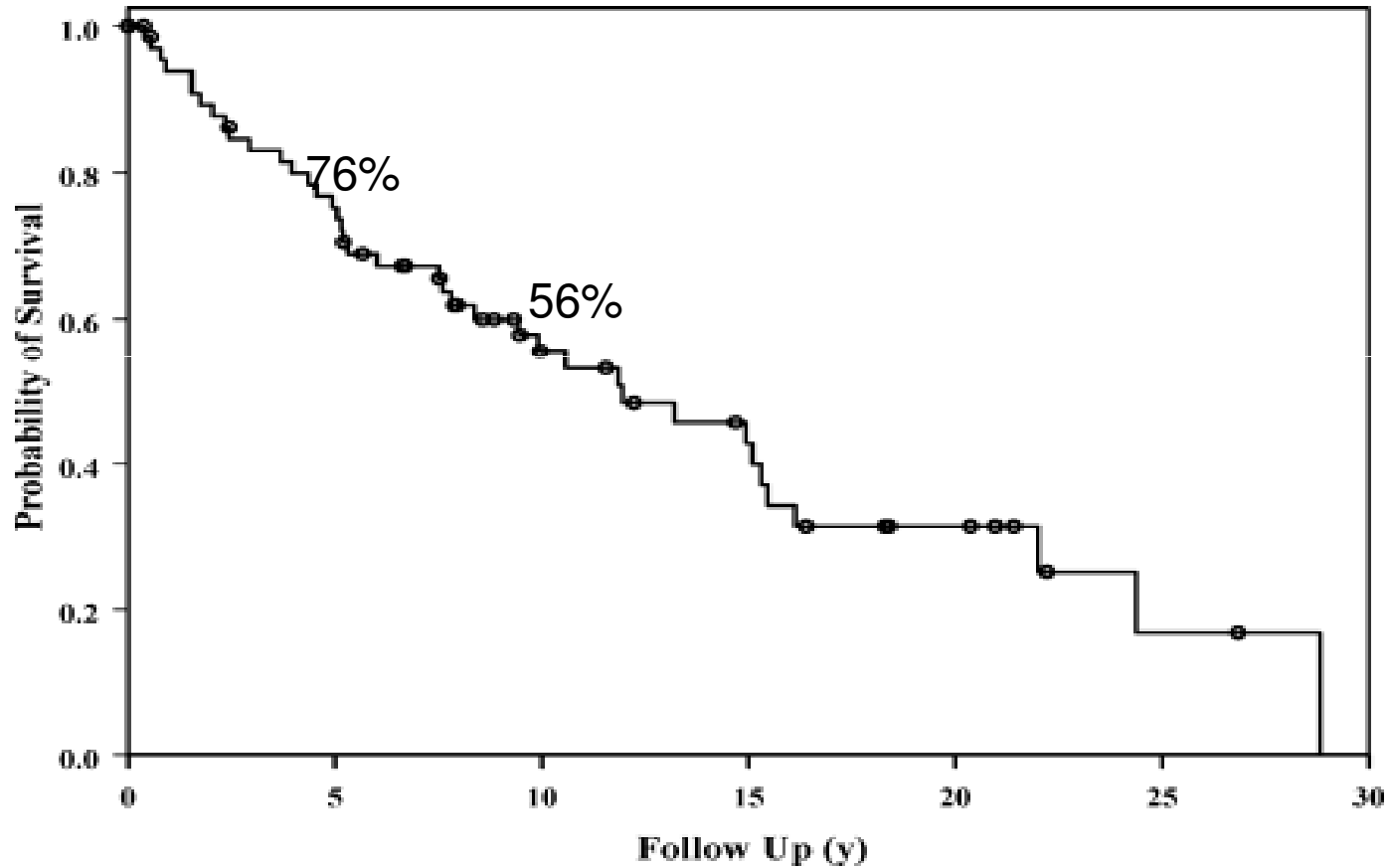
35Gy in 15-20 fractions over 3-4 weeks

- Radiation alone 39 (57%)
- Radiation and surgery 14 (21%)
- Concomitant chemoradiation 3 (4%)
- Surgery alone 8 (12%)
- Chemotherapy alone 1 (1%)
- No treatment 3 (4%)

Survival

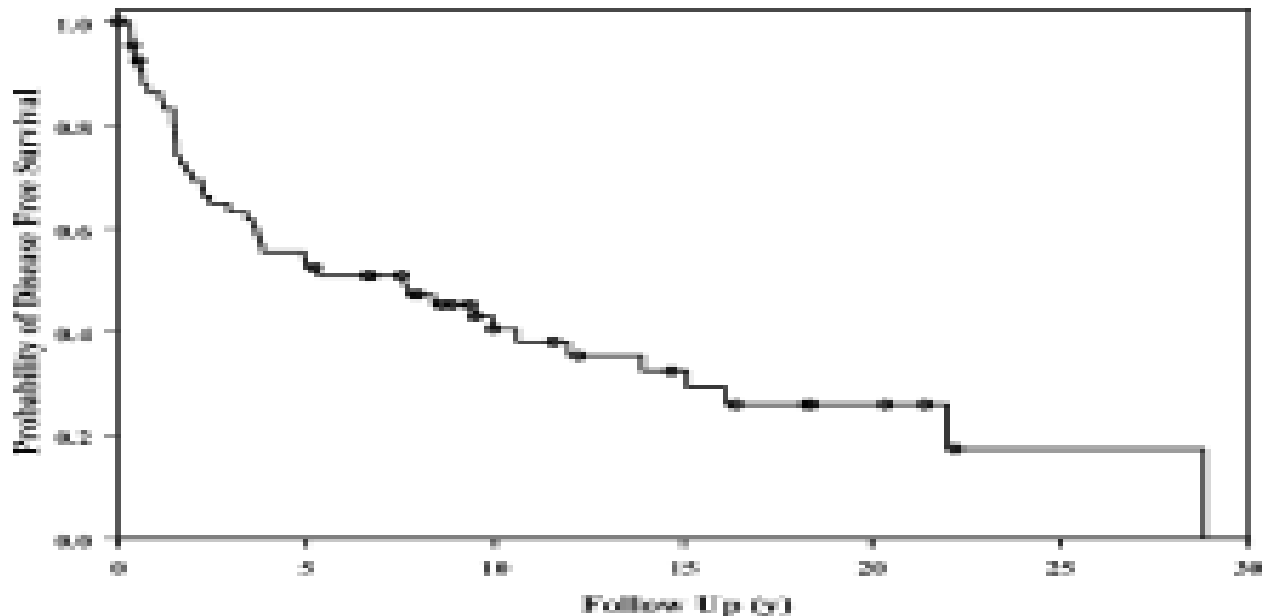
- Median follow-up 8 years (4.6 mos-29.2 yrs)
- Median survival time was 12 years (95% CI, 8.4-15.5 years).

Overall survival



DFS

- 5- year DFS 52% (95% CI, 40-64%)
- 10-year DFS 41% (95% CI, 28-53%)
- Median DFS time was 7.6 years (95% CI, 3.4-12 years)



Local recurrence

- Local recurrences developed in 19% (13/68)
- Mean time to recurrence 36 months
- 5 year local recurrence free 81% (95%CI, 69-89%)
- 10 year local recurrence rates 79% (95%CI, 66-88%)

Recurrence

Table 3. Local, regional, and myeloma recurrence by site

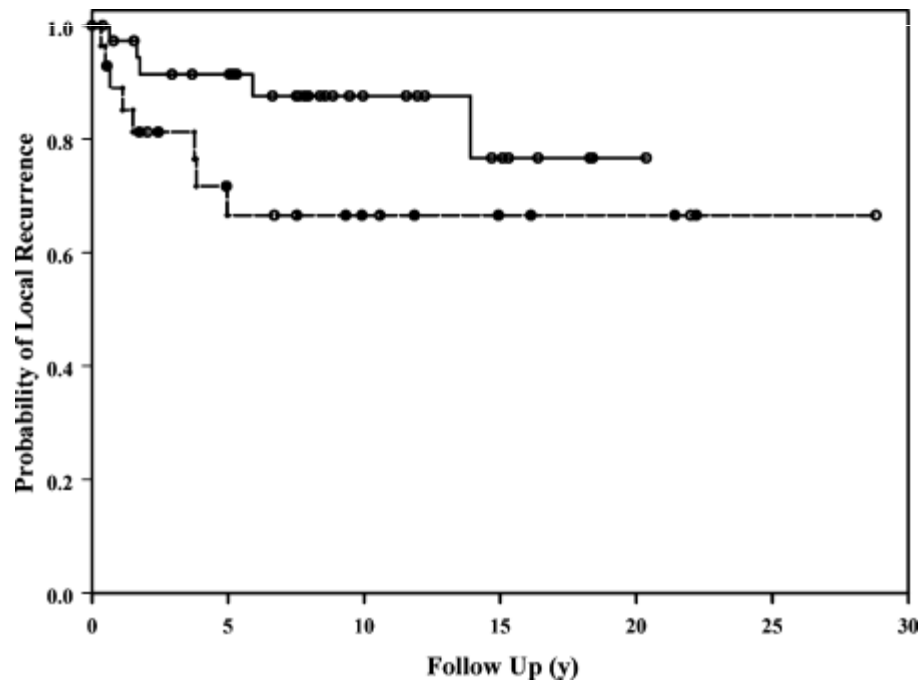
	<i>N</i>	Local recurrence	Regional recurrence	Myeloma
Eyelid	2	1 (50%)	0	0
Head and neck lymph node	1	0	0	0
Larynx	4	1 (25%)	0	0
Nasopharynx	11	0	1 (9.1%)	3 (27.3%)
Neck	4	1 (25%)	0	1 (25%)
Oral cavity	3	0	0	2 (66.7%)
Oropharynx	13	2 (15.4%)	3 (23.1%)	3 (23.1%)
Sinonasal	24	8 (33.3%)	0	6 (25%)
Sphenoid bone	1	0	0	0
Thyroid	1	0	0	0
Upper gum	1	0	0	0
Nasal cavity	1	0	0	0
Parapharyngeal space	1	0	0	0
Supraglottis	1	0	0	1 (100%)

Local recurrence by treatment

- Radiation only 12.8% (5 of 39 patients)
- Surgery only 12.8% (1 of 8 patients)

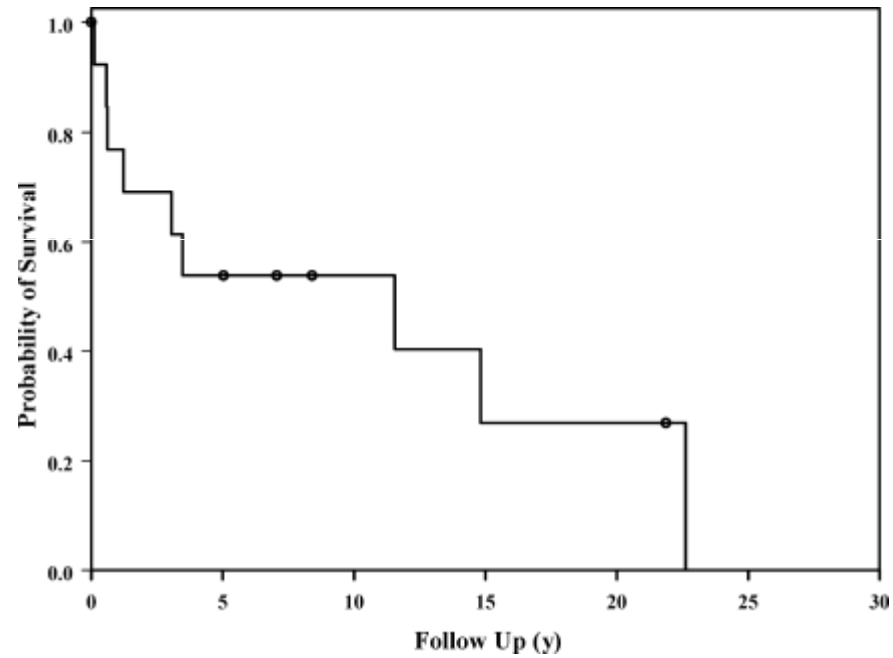
The effect of radiation of local recurrence

Time	No radiation		Radiation	
	Local recurrence-free rate (%)	95% CI	Local recurrence-free rate (%)	95% CI
5 y	67	44-82	91	76-97
10 y	67	44-82	88	70-95



P=0.09

Survival from local recurrence



Progression to multiple myeloma

- Overall 23% (16/68)
- 5-year 23% (95%CI 14-46%)
- 10-year 28% (95% CI, 18-42%)
- Most common primary site when progresses
 - Sinonasal tract (38%, 6/16)
 - Oropharynx (19%, 3/16)
 - Nasopharynx (19%, 3/16)
 - Neck (3%, 1/16)
 - Oral cavity (3%, 1/16)
 - Supraglottis (3%, 1/16)

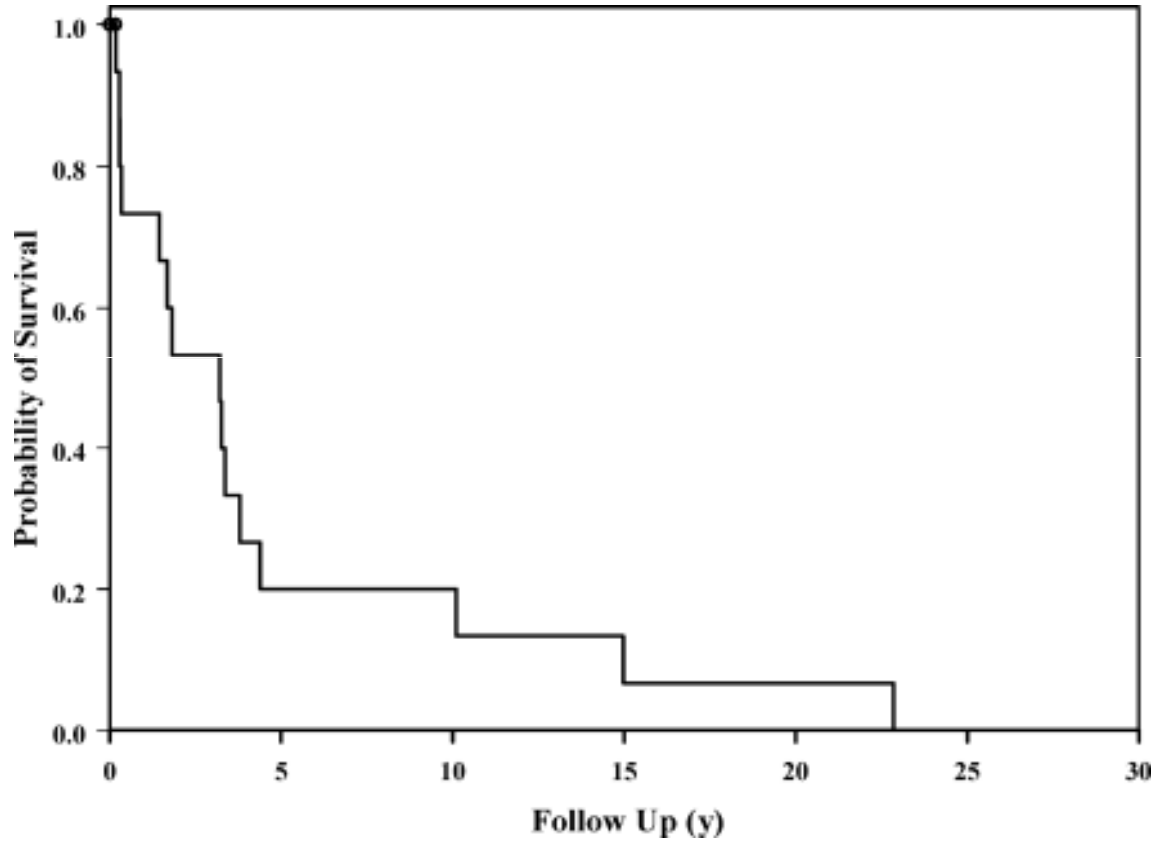
Progression to multiple myeloma

- Bone 10 (63%)
- Lung 1 (6%)
- Groin 1 (6%)
- Unknown 4 (25%)

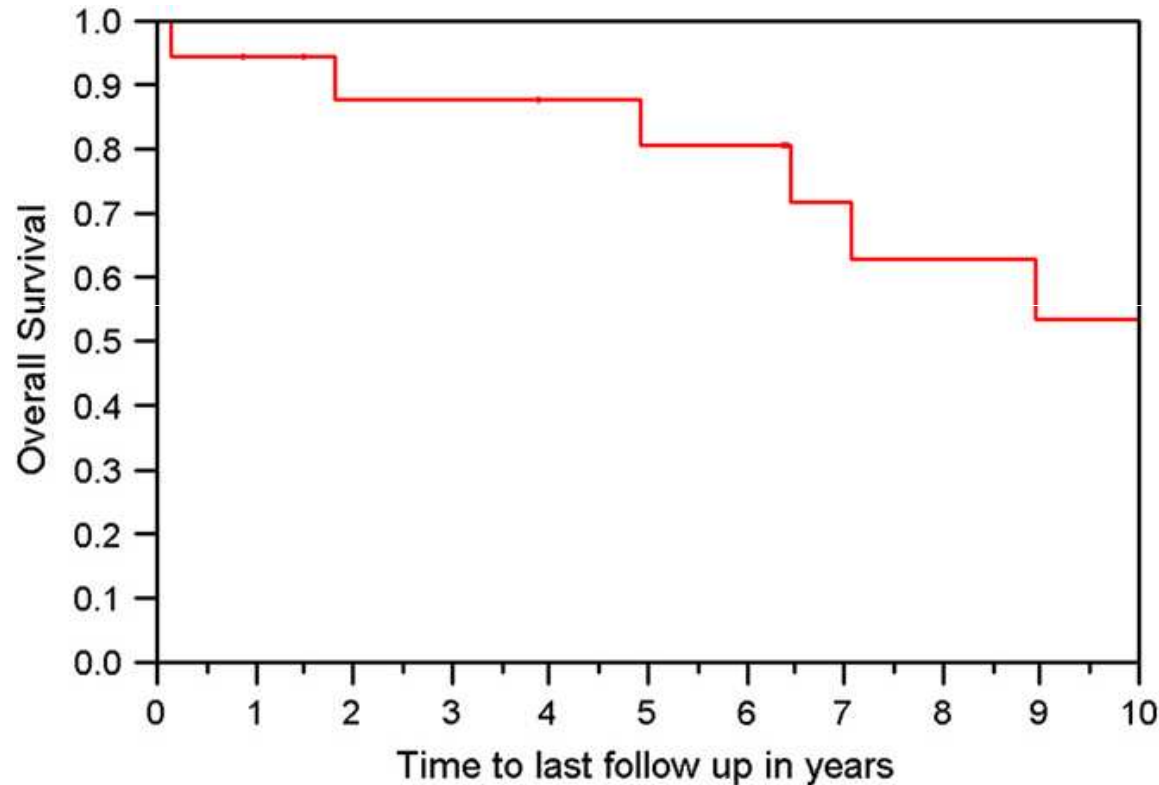
Multiple myeloma

- Surgery 50% (4 of 8)
- Radiation only 17% (7 of 39)
- Surgery and radiation 20% (2 of 10)
- Chemotherapy 66% (2 of 3)
- Average time from local recurrence to myeloma: 6 months
- Average time from regional recurrence to multiple myeloma: 17 months.

Survival from multiple myeloma



OS in 18 patients radiation only, few to multiple myeloma



Creach et al. 2008

Effect of radiation

- Trend toward improved local recurrence rate in patients treated primarily with radiation compared with those treated with other modalities ($p=.09$).
- Recurrence by treatment modalities

	<i>N</i>	Local	Regional	Myeloan
None	3	1 (33.3%)	0	0
Chemotherapy	1	0	0	0
Radiation	39	5 (12.8%)	2 (5.1%)	7 (18%)
Radiation + chemotherapy	3	2 (66.7%)	0	2 (66.7%)
Preoperative radiation + surgery	4	2 (50%)	0	1 (25.0%)
Surgery	8	1 (12.5%)	2 (25.0%)	4 (50%)
Surgery with postoperative radiation	10	2 (20%)	0	2 (20%)

Radiation dosing?

- 23% local failure rate < 40 Gy vs. 9% local failure rate > 40 Gy
- Differences in local failure and initial control are statistically different
- Similar differences in time to recurrence

Univariate prognostic factors in patients with plasmacytoma

		Median PFS (years)	P value	Multiple myeloma free survival (years)	P value
Age					
<55	37	4.6	0.096	7.7	0.0276
>55	32	2.9		3.2	
Type					
Bone	57	3.2	0.0845	4.1	0.1228
EMT	23	7.4		7.4	
Site					
head and neck	30	7.4	0.0246	7.7	0.0807
other	50	3.1		4.1	
Treatment					
Radiation	40	2.6	0.0359	3.2	0.0222
Surgery and radiation	38	7.4		7.7	

Conclusions

- Rare entity
- More common in head and neck and better prognosis
- Radiation for local control, ? Role of surgery, ? RXT dosing
- Multiple myeloma

Case presentation

TB

- 58 year-old male followed for OSA, incidental finding 9/07: intranasal mass
- Asymptomatic
- Biopsy and excision at outside hospital : plasmacytoma (CD 138 and kappa light chain positive)
- Presented for evaluation of residual disease

TB

- PMH: OSA (CPAP), BPH, HTN, GERD, hypercholesterolemia, L1-L2 laminectomy
- FH: child deceased at age 12 from ALL, father, sister- laryngeal SCC, mother- lung cancer, sister-suicide
- SH: 20py, quit 15 years ago. Moderate drinker until 20 years ago
- Medications: Nexium, Amlodipine, Lipitor, Flomax, Aspirin, Viagra

TB

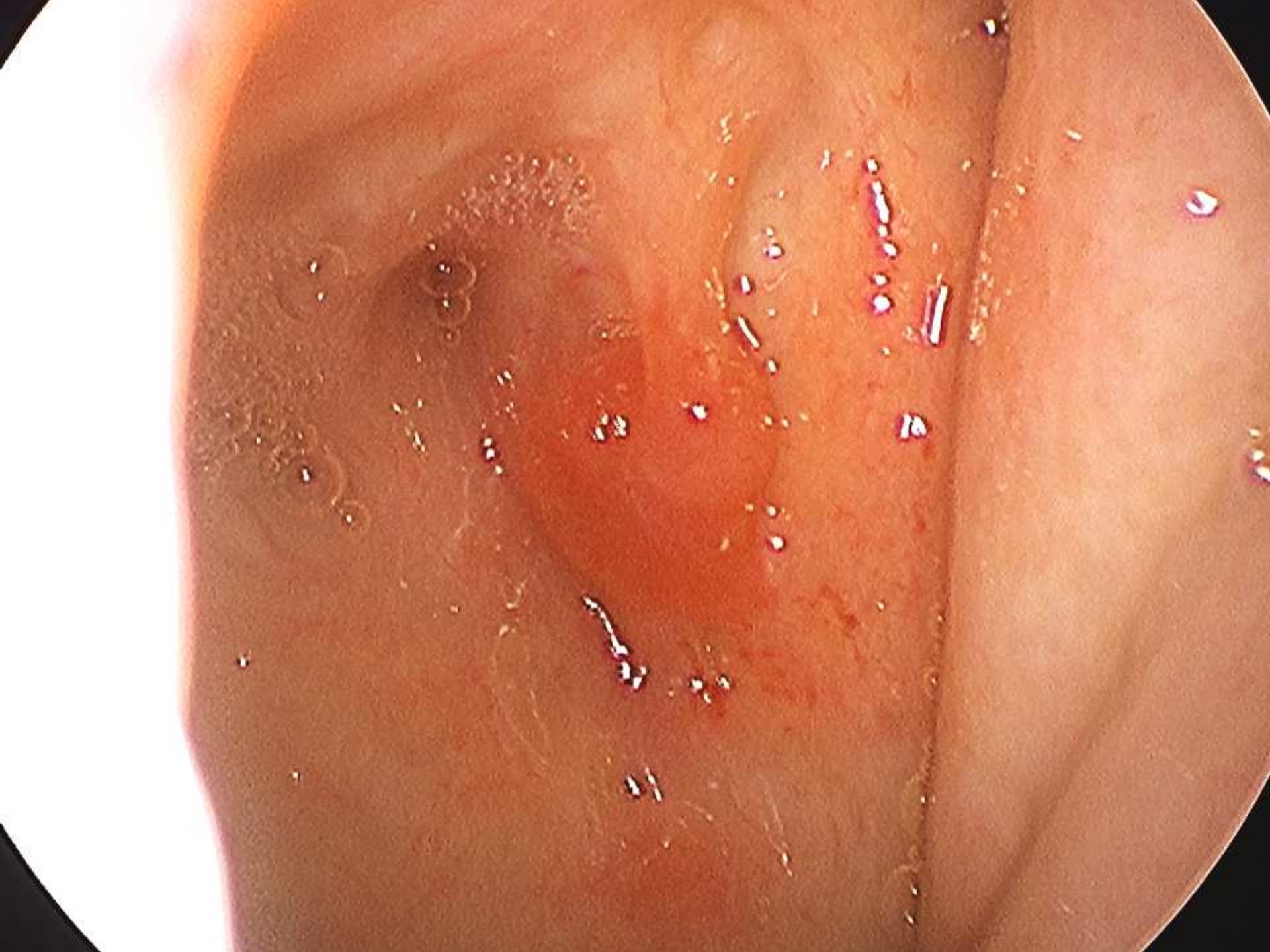
- Examination:
 - Bilateral TMS wnl (no effusion)
 - flexible NPL: normal nasal cavity and nasopharynx, except for small amount of reddish neoplasm 1 cm in greatest size, at left of midline in posterior nasopharynx
 - Neck : no cervical adenopathy

TB

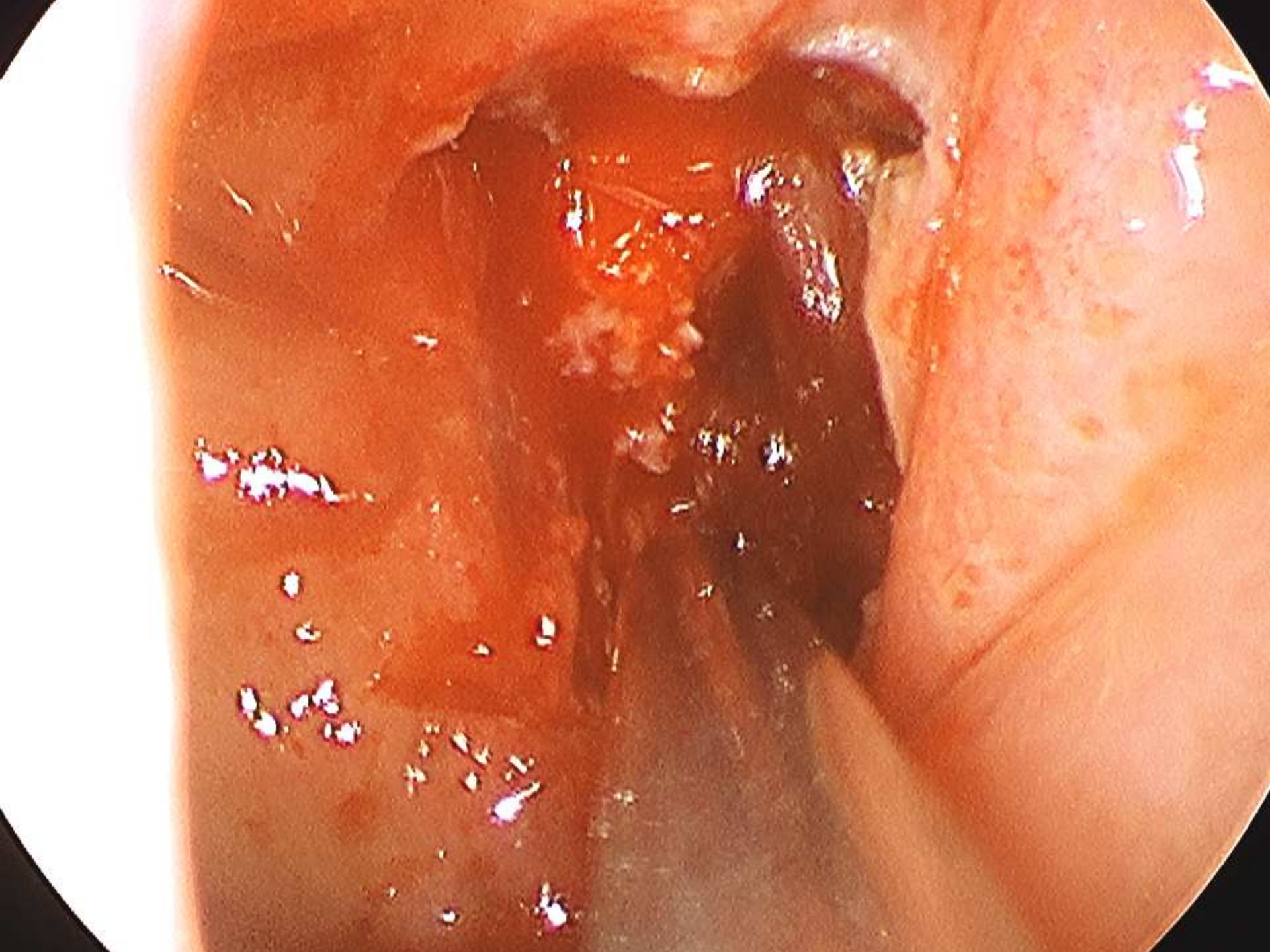
- Skeletal survey negative
- Body CT negative
- Bone marrow biopsy negative
- Blood workup
- Serum and urine electrophoresis:
 - IgG: 629, IgA: 355, IgM: 54, beta thromboglobulin of 1.62.
 - Serum protein electrophoresis: M spike of 0.09 cm.
 - Serum immunofixation reveals an IgA kappa restrictive band.
 - Urine protein electrophoresis normal.
 - Serum free light assay: slightly elevated kappa of 23.6 with a normal lambda 15.7 and a normal ratio of 1.50.

TB

- 4/08 NPL: NP mass at junction of posterior and superior walls, 1cm and centrally cavitated with 2 new red lesions which appeared during radiation and remained persistent
- PET/CT, CT with IV contrast (7/08). NED







Treatment

- Definitive radiation therapy completed 2/08
- 50 Gy to the nasopharynx
- 45 Gy to the retropharyngeal lymph nodes and bilateral level 2 nodes.

- Pathology

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