

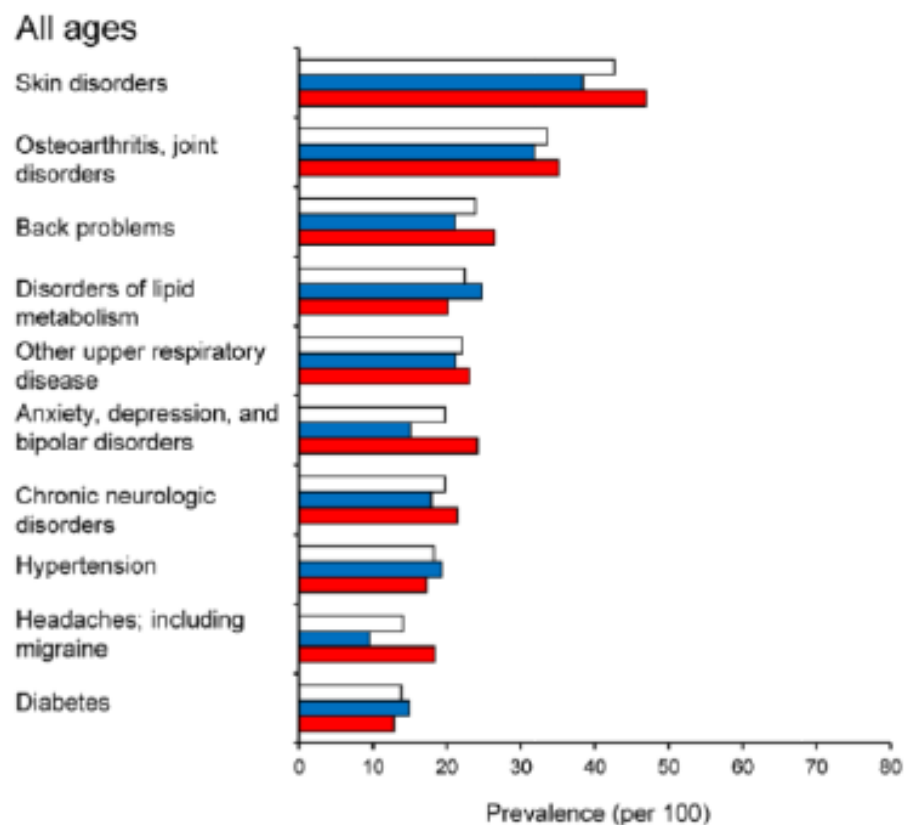
# A devastating complication of epidural injection for chronic back pain

Stephanie Murphy DO



# Why do patients visit their doctors? Assessing the most prevalent conditions in a defined US population

*Mayo Clin Proc.* 2013 January ; 88(1): 56-67.



# Lecture outline

- **Clinical vignette**
- **Literature review**
- **Discussion**

- **CC: Back and leg pain**
- **HPI: 69 yo F presents with back and leg pain associated with lower extremity numbness after receiving an epidural steroid injection for chronic back pain earlier the same day.**

# Timeline of events

- **Received injection at 2pm, walks to car to drive home**
- **Difficulty ambulating out of car upon arrival home**
- **20 min later bilateral lower extremity strength deficit and loss of urinary function**

# Past Medical History

- **CAD S/P CABG**
- **Hypertension**
- **Hyperlipidemia**
- **Breast cancer S/P mastectomy**
- **Post-operative hypothyroidism**
- **Chronic back pain**

# Home Medications

- Carvedilol 3.125 mg BID
- Aspirin 325 mg daily
- Losartan 50 mg QD
- Simvastatin 40 mg HS
- Levothyroxine 112 mcg QD
- Meclizine 50 mg QD
- Oxybutynin 2.5 mg HS
- Pantoprazole 40 mg QAM
- Advair 100/50 BID
- Ventolin inhaler PRN
  
- **Nortriptyline 25 mg QAM**
- **Neurontin 300 mg BID**
- **Tramadol 50 mg Q4H PRN**

# Past Surgical History

- CABG x 4 vessels
- Left mastectomy
- Thyroidectomy for nodules (benign)



- **Family history**
  - **Mother: CVA**
  - **Father: prostate cancer, CAD**
- **Social history**
  - **Denies tobacco, alcohol or drug use**

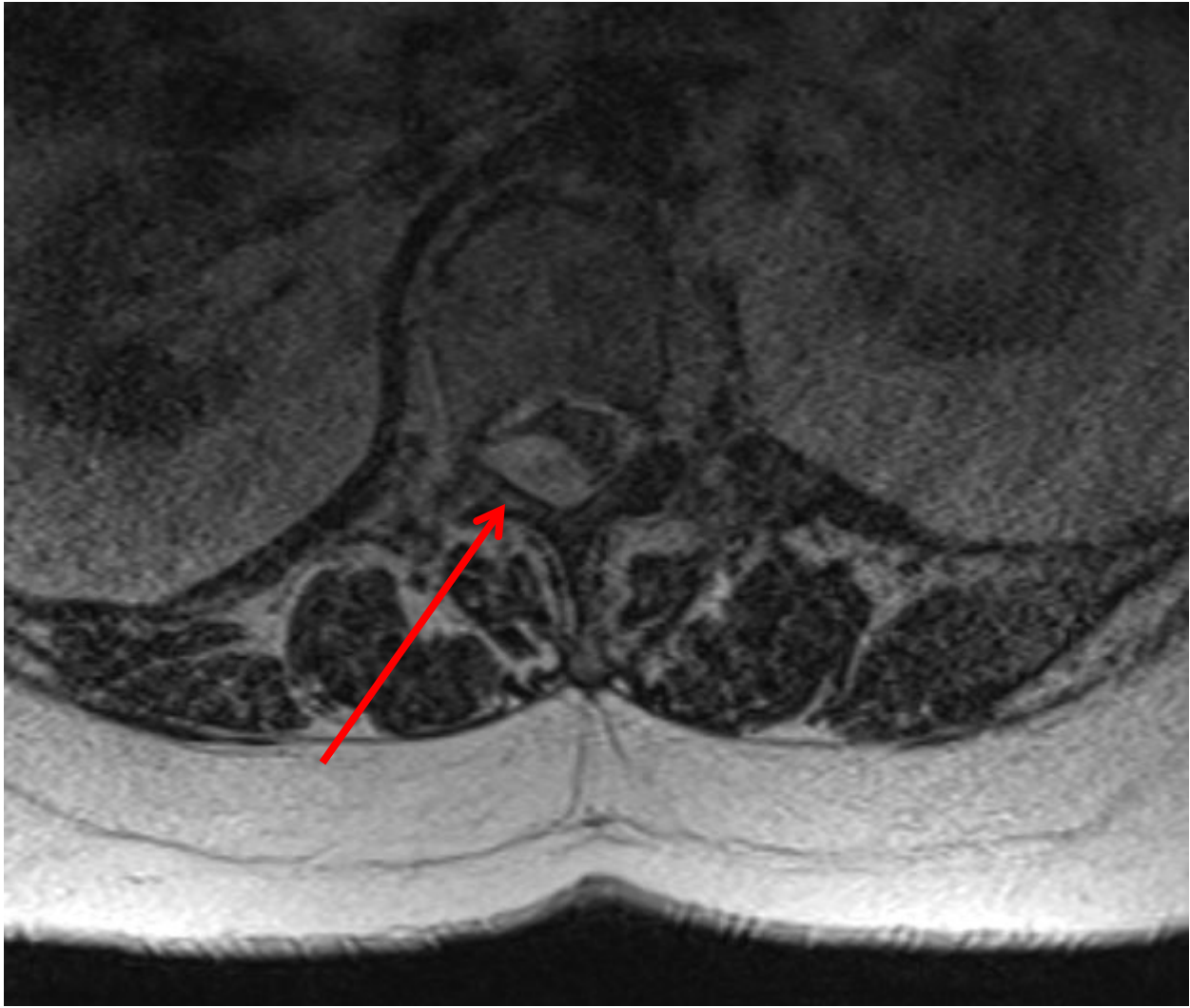
# Review of systems

- **CONSTITUTIONAL:** **weakness**, weight loss/gain, fever, chills, fatigue
- **GENITOURINARY:** **urinary incontinence**, frequency, hesitancy, urgency
- **NEUROLOGICAL:** **decreased sensation in left leg, numbness/tingling in left leg**, seizure, syncope
- **MUSCULOSKELETAL:** **weakness in lower extremities**, joint swelling, joint stiffness

# Physical Exam

- **GENERAL:** The patient is pleasant and cooperative, appears in no acute distress, lying comfortably in bed
- **VITALS:** Temp. 97.0, HR 87 BP 136/85, RR 22, 97% on 2L
- **NEUROLOGIC:** She is awake and oriented x3. Cranial nerves II through XII appear grossly intact. **Severe difficulty moving left lower extremity. Sensation is slightly decreased in left leg grossly as well. Muscle strength in upper extremity is 4/5 and strength in the right lower extremity is 3/5. The left lower extremity is 2/5**





# Hospital Day 2

- **Decompressive laminectomy with foraminotomy L1-4**
  - **Findings:**
    - acute clotted blood in epidural space L1-5
    - 2x dural lacerations
  - **Complications**
    - Estimated blood loss 1000 ml
      - 1 unit PRBC transfused

# Hospital course

- **Chronic headaches due to CSF fluid fistula**
  - **Lumbar subarachnoid drain day 23**
- **Significant depression develops**
- **Nearly 2 month hospitalization (including 3 weeks of acute rehab)**

# Discharge condition

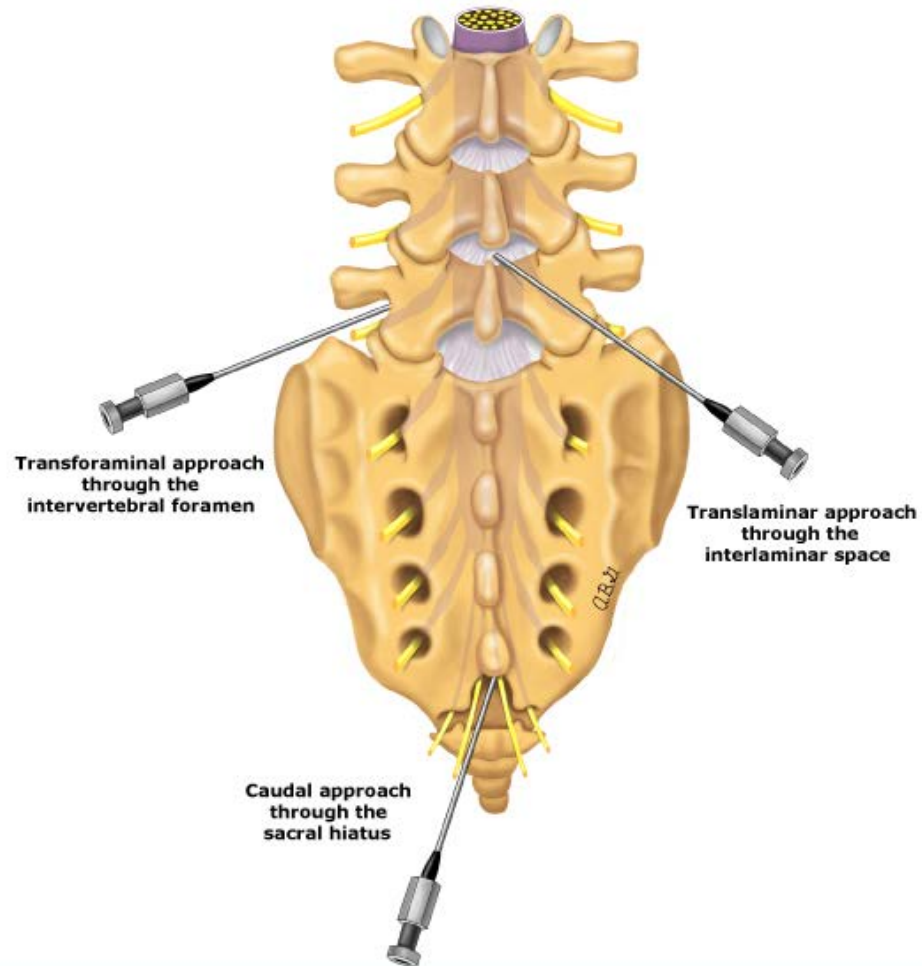
- **Ambulates 10 feet at most with front wheel walker**
- **Voluntary bladder control**
- **Bowel control with digital stimulation and suppository use**



# Discussion

- **What evidence supports the use of epidural injections for chronic back pain?**
- **Were the benefits worth the risks?**
- **Was this an avoidable complication?**

## Approaches for lumbar epidural glucocorticoid injections





**Annals of Internal Medicine**

| REVIEW

# **Epidural Corticosteroid Injections in the Management of Sciatica**

**A Systematic Review and Meta-analysis**

Rafael Zambelli Pinto, MSc; Chris G. Maher, PhD; Manuela L. Ferreira, PhD; Mark Hancock, PhD; Vinicius C. Oliveira, MSc; Andrew J. McLachlan, PhD; Bart Koes, PhD; and Paulo H. Ferreira, PhD

*The* NEW ENGLAND  
JOURNAL *of* MEDICINE

ESTABLISHED IN 1812

JULY 3, 2014

VOL. 371 NO. 1

A Randomized Trial of Epidural Glucocorticoid Injections  
for Spinal Stenosis

**Table 2. Primary Outcomes According to Treatment Group and Injection Approach.\***

Variable	Lidocaine			Glucocorticoid-Lidocaine			Treatment Comparison	
	No. of Patients	Overall Mean	Mean Change from Baseline	No. of Patients	Overall Mean	Mean Change from Baseline	Adjusted Difference (95% CI)†	P Value
<b>Overall</b>								
RMDQ score								
Baseline	200	15.7±4.3	—	200	16.1±4.5	—	—	—
3 wk	189	13.1±5.7	-2.6±4.4	195	11.7±6.1	-4.4±5.7	-1.8 (-2.8 to -0.9)	<0.001
6 wk‡	193	12.5±6.4	-3.1±5.3	193	11.8±6.3	-4.2±5.8	-1.0 (-2.1 to 0.1)	0.07
Score on numerical rating scale for leg pain								
Baseline	200	7.2±1.8	—	200	7.2±1.9	—	—	—
3 wk	188	5.0±2.8	-2.2±2.9	195	4.4±2.7	-2.9±2.8	-0.6 (-1.2 to -0.1)	0.02
6 wk	193	4.6±2.9	-2.6±3.0	193	4.4±2.9	-2.8±3.1	-0.2 (-0.8 to 0.4)	0.48

# **Serious Neurologic Events after Epidural Glucocorticoid Injection — The FDA's Risk Assessment**

Judith A. Racoosin, M.D., M.P.H, Sally M. Seymour, M.D., Laurelle Cascio, Pharm.D., and Rajdeep Gill, Pharm.D.

**Between 1997 and 2014, a total of 90 serious and sometimes fatal neurologic events were reported to the FDA Adverse Event Reporting System (FAERS), including cases of paraplegia, quadriplegia, spinal cord infarction, and stroke**

# Serious Neurologic Events after Epidural Glucocorticoid Injection — The FDA’s Risk Assessment

Judith A. Racoosin, M.D., M.P.H, Sally M. Seymour, M.D., Laurelle Cascio, Pharm.D., and Rajdeep Gill, Pharm.D.

**“serious neurologic events, some resulting in death, have been reported with epidural injection of corticosteroids”**

**“safety and effectiveness of epidural administration of corticosteroids have not been established and corticosteroids are not approved for this use.”**

# **The risks of epidural and transforaminal steroid injections in the Spine: Commentary and a comprehensive review of the literature**

[Nancy E. Epstein](#)

**Medicare data alone document a 160% increase in these procedures between 2000 and 2012, while also noting that about (probably at least) 20% of those performing these procedures are inadequately trained.**



# Conclusions

- **There are questionable benefits of epidural steroid injection with short term benefits at best**
- **The safety data of the medication itself as well as operator expertise has been called into question**
- **The implications of this patient's complications are still unclear**

# References

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Questions?