

EVERYTHING YOU NEED TO KNOW TO DO A.S.C. SPINE SURGERY

Kenneth A. Pettine, M.D.



**Orthopedic
Stem Cell Institute**

ADULT MESENCHYMAL STEM CELL THERAPIES

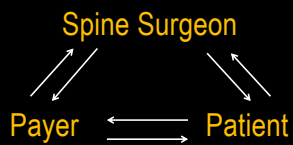
MY GOAL

- Move **50%** of Inpatient Hospital Spine Surgeries in the United States to an A.S.C.



- We must change Medicare A.S.C. guidelines

HOSPITAL VS. A.S.C.



HEY FOCKER!!

- Hospitals are outside the "inner" circle of trust



A.S.C. SPINE SURGERY

- Safe and efficacious
- **60%** cost savings compared to hospitals
- Better patient satisfaction
- Profitable

A.S.C. SPINE SURGERY

- What do you need?
 - Equipment
 - Surgeons
 - Contracts



SPINE SURGERY EQUIPMENT

- | | |
|------------------------------------|--------------------|
| • Cloward Table (medium and large) | \$2,000.00 |
| • Cell Saver (refurbished) | \$5,000.00 |
| • Spine instruments | \$25,000.00 |
| • Retractors | \$5,000.00 |
| • Misc. | \$13,000.00 |
| • Estimated Total | \$50,000.00 |

HEADLIGHT- MANDATORY



Cordless Battery Powered LED Technology

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N avigation
E ngine

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SPINE SURGEON RECRUITMENT

- A.S.C. spine surgery data
- Implant income
- Better patient care
- Better surgeon lifestyle
(10 min. turn over time)



INSURANCE CONTRACTS

- Implant cutouts: **10%** over retail invoice
- Case rates



SPINE IMPLANT COSTS

- Cervical Fusion
 - 1 level \$12,000.00
 - 2 level \$20,000.00
- Lumbar Fusion
 - 1 level \$25,000.00
 - 2 level \$35,000.00
 - 3 level \$45,000.00

WHOLESALE VS. RETAIL

- Negotiate **40%** to **60%** discount
- Share with spine surgeon



• Typical Spine Surgeon

- Annual Implant Billing Billing 2.5 Million
- Annual Implant Collections 1.8 Million

- **Typical Spine Surgeon**

- Annual A.S.C. billed charges \$ 9.4 million

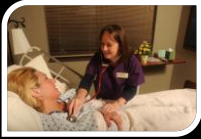


LOVELAND SURGERY CENTER

- A.S.C.-Three O.R.'s
 - 6,550 Square Feet
- Convalescent Center-Four Patient Rooms
 - 1,950 Square Feet



CONVALESCENT CENTER LICENSE



- Similar license as a nursing home
- No limit on length of stay

OPTIONS WITH ONLY A.S.C.

- 23 hour license with home health care
- Association with a rehabilitation facility

SPINE SURGERY AT LOVELAND SURGERY CENTER

- Spring 2003 to Spring 2010
- Total Spine Cases: 2,932
 - Instrumented 1,242
 - Non-instrumented 1,690



INSTRUMENTED SPINE SURGERY

- **Anterior Cervical Fusion** **1242 PATIENTS**
 - 1 Level : 172 Patients
 - 2 Level : 112 Patients
 - 3 Level : 25 Patients
- **Posterior Cervical Fusion:** 14 Patients
- **Cervical Artificial Disc:** 257 Patients
- **Anterior Lumbar Interbody Fusion:** 15 Patients
- **Posterior Lumbar Fusion**
 - 1 Level : 237 Patients
 - 2 Level : 132 Patients
 - 3 Level : 52 Patients
- **Lumbar Artificial Disc :** 217 Patients
- **SI Joint Fusions:** 9 Patients

RESULTS OF A.C.F.

ONE AND TWO LEVEL

284 PATIENTS



- Peri-Operative Complications = None
- Unplanned Transfers = None

RESULTS OF A.C.F.

- Time In OR
 - 1 Level : 81.72 Min.
 - 2 Level : 84.43 Min.
- Time In PACU
 - 1 Level : 92.54 Min.
 - 2 Level : 80.80 Min.
- Convalescent Care
 - 1 Level : 20.68 Hours
 - 2 Level : 20.33 Hours

CONCLUSIONS OF A.C.F. DATA

- Anterior Cervical Fusion Can Be Safely Performed With Efficacy At An A.S.C.

CERVICAL ARTIFICIAL DISC

ONE AND TWO LEVEL

257 PATIENTS

- ⇒ O.R. Time: 84 minutes
- ⇒ P.A.C.U: 81 minutes
- ⇒ Convalescent Center: 20 hours
- ⇒ Complications: No Infections, Nerve Injuries, Re-operations, or Unplanned Transfer



CONCLUSIONS OF CERVICAL ARTIFICIAL DISC DATA

- Cervical Artificial Disc Surgery can safely be performed at an A.S.C.



LUMBAR ARTIFICIAL DISC

217 PATIENTS

- Time In O.R.
 - 100 Min.
- Time In P.A.C.U.
 - 83 Min.
- Time In Convalescent (Less Than 1 Day)
 - 21 Hours



LUMBAR ARTIFICIAL DISC

Peri-Operative Complications

- One Intra-Op 2mm Vein Laceration = Intra-Operative Repair
- One Arterial Thrombosis = Transfer to Hospital for Immediate Thrombectomy
- Return To O.R. (2 Patients)
 - Reposition Implant (1 Patient)
 - Convert to A.L.I.F. (1 Patient)

CONCLUSIONS OF LUMBAR ARTIFICIAL DISC DATA

- Lumbar Artificial Disc Surgery Can Be Safely Performed With Efficacy At An Outpatient A.S.C.



NON-INSTRUMENTED SPINE SURGERY

Microdiscectomies/Nerve Decompressions
1690 Patients

- OR Time : 74 Minutes
- PACU Time : 78 Minutes
- Convalescent Time : 19 Hours

NON-INSTRUMENTED SPINE SURGERY

Peri-Operative Complications

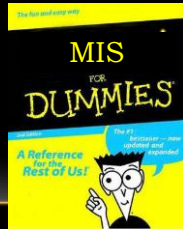
- One Patient Returned to O.R. to Drain Fluid

CONCLUSIONS OF NON-INSTRUMENTED SPINE SURGERY

- Lumbar Microdiscectomies/Nerve Decompressions Can Be Performed at an A.S.C. With Safety and Efficacy

COFLEX-F INTERLAMINER IMPLANT FOR LUMBAR FUSION

- "MIS for Dummies"



COFLEX-F INTERLAMINER IMPLANT FOR LUMBAR FUSION

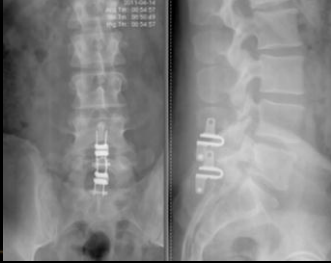


- Any spine surgeon can do this procedure

COFLEX-F INTERLAMINER IMPLANT FOR LUMBAR FUSION



COFLEX-F INTERLAMINER IMPLANT FOR LUMBAR FUSION



RESULTS OF COFLEX-F 195 PATIENTS

- Average age 56
- Average BMI 29
- Average recovery 17 hours

RESULTS OF COFLEX-F

- One level 96 patients
 - Average time 42 Minutes
 - Average EBL 23 cc
- Two level 78 patients
 - Average time 72 Minutes
 - Average EBL 38 cc
- Three level 21 patients
 - Average time 102 Minutes
 - Average EBL 44 cc

RESULTS OF OUTPATIENT LUMBAR FUSION

- Randy Dryer M.D. Austin, Texas
 - Bill Smith M.D. Las Vegas, Nevada
 - Alan Villavicencio M.D. Boulder, Colorado
- Outpatient Lumbar Fusion experience is the same

SPINE SURGERY AT AN A.S.C. INSTRUMENTED SPINE SURGERY

Anterior Cervical Fusions (one, two and possible three level)

Anterior Lumbar Fusions (one, two and possible three level)

Lumbar and Cervical Artificial Disc Replacements

Lumbar Interlaminar Devices (Coflex-F and lateral approach fusions)

SPINE SURGERY AT AN A.S.C. NON-INSTRUMENTED SPINE SURGERY

- Nerve Decompressions
- Microdiscectomies

CONCLUSIONS

- Don't be stupid you can do this!



- Don't Leave Implant Money on the Table!



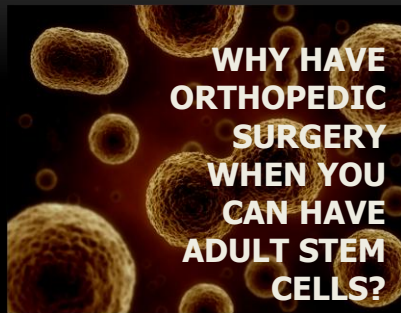
- Spine Surgery is too important to your A.S.C.



Adult Mesenchymal Stem Cell Therapies

Kenneth A. Pettine, M.D.

Material adapted from Richard Suzuki, Ph.D.



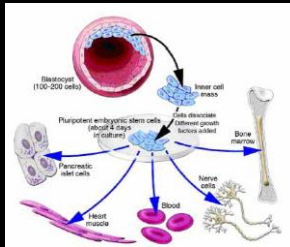
Did you know...

Stem cells are the foundation of every organ and tissue in our bodies. They are the cells that can become any type of cell in the body. They are the cells that can replace damaged or diseased cells. They are the cells that can help us heal ourselves.

Stem cells are currently being used in orthopedic, cardiovascular, trauma and plastic surgeries and to treat diseases. Public figures, celebrities and athletes also are seeking stem cell treatments in the United States and abroad.

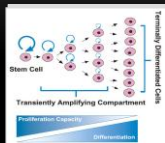
Stem cells are the foundation cells for every organ and tissue in our bodies.

EMBRYONIC STEM CELLS

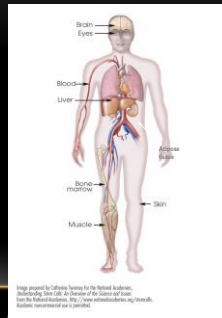


- Only present in blastocyst
- Blastocyst only present 5 to 20 days after fertilization
- "Totipotent" Cells

ADULT STEM CELLS



- Undifferentiated cells
- Found throughout your body
- "Multipotent" Cells
- Maintain normal cell turn over (red blood cells)



MESENCHYMAL STEM CELLS

- Bone marrow is a rich source of Mesenchymal Stem Cells (MSC)
- Primary Cell for Orthopedics and Spine

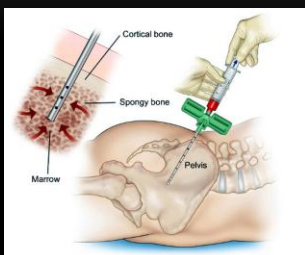
CELLULAR THERAPIES

- Use living cells to treat injuries and promote natural healing.
- The goal is to harness the natural healing potential of stem cells.
- No reports of any adverse effects with autogenous mesenchymal stem cells

AUTOLOGOUS, POINT-OF-CARE CELL THERAPIES

- Patient's own cells.
- Cells are harvested, processed and provided back to the patient during the same surgery.
- Cells never leave the operating room.

BONE MARROW ASPIRATION FROM THE ILIUM



ART21 Cell Concentration System

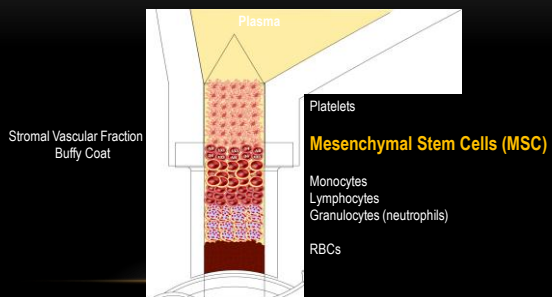


ART21 Cell Concentration System

Rapid, efficient cell processing technology



CONCENTRATING BONE MARROW



THE PURPOSE OF ADULT STEM CELLS IS TO PROMOTE *NATURAL HEALING*

ORTHOPEDIC STEM CELL INSTITUTE

- Patient receives IV Sedation
- With sterile technique, 60 cc of bone marrow are aspirated from the Iliac Wing
- The bone marrow is centrifuged into 10 cc of concentrated Mesenchymal Stem Cells
- The Mesenchymal Stem Cells are injected into the patient
- The whole procedure is around 30 min
- The patient is returned to the recovery room and discharged

ORTHOPEDIC STEM CELL INSTITUTE

- Mesenchymal Stem Cells can be injected into the following sites:
 - Cervical Discs
 - Lumbar Discs
 - Shoulder
 - Hip
 - Knee
 - Ankle
 - Hand
 - Tendons

ORTHOPEDIC STEM CELL INSTITUTE

- No reports of any adverse effects from autogenous Mesenchymal Stem Cells
- Mesenchymal Stem Cells are pluripotent
- Purpose is to promote *natural healing*
- Results are very promising in animal studies, veterinary medicine and human applications

ORTHOPEDIC STEM CELL INSTITUTE RESULTS

Cervical

6 patients	10 levels	
3 month average NDI improvement		44%
3 month average VAS improvement		46%

Lumbar

36 patients	68 levels	
3 month average ODI improvement		56%
3 month average VAS improvement		38%

P= 0.0036

- Please join **The Society for Ambulatory Spine Surgery**

[www. societyforambulatoryspinesurgery.org](http://www.societyforambulatoryspinesurgery.org)

THANK-YOU!