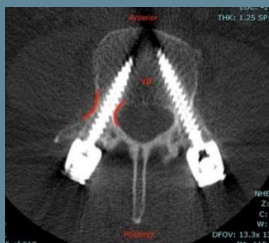
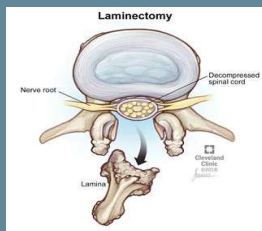
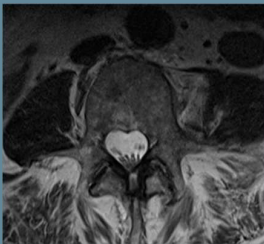
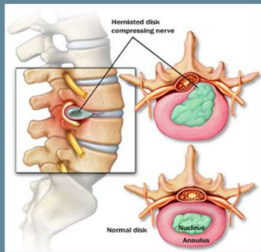
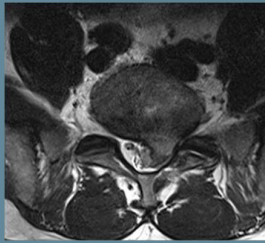


POSTERIOR OPEN LUMBAR DECOMPRESSION WITH PEDICLE INSTRUMENTATION AND BONE GRAFT FUSION



➤ OBJECTIVES OF SURGERY



THE MAIN REASON FOR THIS SURGERY IS TO ADEQUATELY DECOMPRESS NERVES AND NERVE ROOTS THAT HAVE BEEN COMPRESSED BY THE PROCESS OF DISC PROTRUSION AND FACET JOINT ARTHRITIS. THIS STOPS THE NERVES BEING IRRITATED AND RELIEVES THE SYMPTOMS OF PAIN IN THE LEG. IF THERE ARE ANY SYMPTOMS OF NUMBNESS, PINS AND NEEDLES OR WEAKNESS, THIS CAN ALSO STOP THE WORSENING OF THESE SYMPTOMS AND OFTEN ALLOWS THE NERVES TO RECOVER IN TIME TO NORMAL FEELING AND MOVEMENT IN THE LEGS.

IN CASE OF DIFFICULTIES WITH WALKING LONG DISTANCES, THIS SURGERY CAN STOP THE WORSENING OF THIS SYMPTOM, AND DEPENDING ON THE DURATION OF THIS CONDITION, REVERSE SOME OF ITS EFFECTS.

➤ DETAILS OF SURGERY

THE SURGERY IS PERFORMED WITH THE PATIENT LYING ON THE STOMACH ON A SPECIALISED OPERATING TABLE, THAT IS EXTENSIVELY PADDED AND DESIGNED TO ALLOW SURGERY TO GO ON FOR VERY LONG TIME WITHOUT THE PATIENT BEING AFFECTED BY THIS POSITION. THE APPROACH TO THE SPINE IS VIA THE MIDLINE INCISION, EVEN THOUGH THE PARASPINAL MUSCLES ARE RETRACTED UP TO 10 CENTIMETRES TO THE SIDES. DEPENDING OF THE NUMBER OF LEVELS OPERATED ON, THE LENGTH OF SURGERY IS USUALLY AROUND 2-3 HOURS.

➤ DECOMPRESSION

THE STRUCTURES REMOVED TO ALLOW ADEQUATE DECOMPRESSION OF NERVES IN THE SPINE, MAY INCLUDE THE FACET JOINTS THAT ARE AFFECTED BY ARTHRITIS OR INVOLVED IN THE SPINAL DEFORMITY, AND THE INTERVERTEBRAL DISCS, THAT ARE DEGENERATED AND DYSFUNCTIONAL. NONE OF THE PARASPINAL MUSCLES ARE REMOVED, ONLY DEFLECTED AND AT THE END OF THE SURGERY ALLOWED TO MOVE BACK TO THEIR ORIGINAL POSITION. THE AMOUNT OF DECOMPRESSION MOST OFTEN NECESSITATES SUBSEQUENT STABILISATION WITH PEDICLE SCREWS AND RODS.

➤ INSTRUMENTATION

TO MAINTAIN STABILITY OVER THE SPINAL SEGMENTS DECOMPRESSED AND SPINAL DEFORMITY CORRECTED, TITANIUM INSTRUMENTS ARE USED TO STABILISE THE SPINE. THESE ARE MADE OF HIGH-GRADE SURGICAL TITANIUM (CAGES ARE LASER 3D PRINTED) THAT BY THEIR PROPERTIES RESEMBLE REAL BONE AND ITS FLEXIBILITY AND STIFFNESS. THERE ARE TWO SCREWS IN EACH VERTEBRA PLACED WITH AID OF IMAGING SUCH AS XRAY, CT AND MRI. THESE ARE CONNECTED TO EACH OTHER BY RODS AND X-LINK

THE DISC IS REPLACED BY CAGES THAT ALLOW DISTRACTION OF THE VERTEBRAE AND RECONSTITUTION OF THE TUNNEL FOR EACH NERVE ROOT AS THEY EXIT THE SPINAL CANAL. THEY ALSO ALLOW NORMAL LUMBAR SPINE LORDOSIS TO BE RESTORED.

THE SCREWS, RODS AND CAGES STAY IN THE SPINE INDEFINITELY, AS THEY ARE NOT POSSIBLE TO BE FELT BY THE PATIENTS. THEY COULD BE REMOVED, BUT THIS WOULD REQUIRE ANOTHER SURGERY AND THAT IS MOST OFTEN NOT NECESSARY.

➤ BONE GRAFT FUSION

THE BONE REMOVED DURING THE PRECEDING DECOMPRESSION IS SUBSEQUENTLY PROCESSED TO THE SIZE OF COARSE GRAVEL AND FORMS THE BONE GRAFT THAT IS THE INTEGRAL COMPONENT OF THE FUSION MASS. THIS BONE GRAFT (AUTOGRAFT) IS MIXED WITH HIGHLY EFFECTIVE BONE SUBSTITUTE (SYNTHETIC) AND PLACED AROUND THE CAGES AT THE FRONT OF THE SPINAL COLUMN AND AT THE BACK AROUND THE SIDE OF THE VERTEBRAE TO FORM THE FUSION. THIS TAKES PLACE OVER SEVERAL WEEKS. THE SUCCESS OF THE FUSION IS LARGELY OUT OF CONTROL OF THE SURGEON AND THE PATIENT AT THAT POINT, BUT TOGETHER WITH OVER DECADES DEVELOPED SURGICAL TECHNIQUE AND THE PATIENT FOLLOWING A HEALTHY LIFESTYLE WITH ADEQUATE NUTRITION, IN OVER 95% CASES, THE BONE GRAFT IS FUSED WITHIN 6 MONTHS AFTER SURGERY. AT THAT POINT THE METALWARE BECOMES SUPERFLUOUS, AND THE PATIENT COULD ENGAGE IN THE MOST STRENUOUS ACTIVITIES.

➤ COMPLICATIONS OF SURGERY

MUCH LIKE WITH ANY SURGERY, THERE ARE POSSIBLE RISKS AND COMPLICATIONS ASSOCIATED WITH THIS PROCEDURE. THE THREE CATEGORIES OF COMPLICATIONS ARE RELATIVELY COMMON RISKS, RARE RISKS AND THOSE THAT ARE STILL UNCOMMON, BUT VERY RELEVANT TO THIS PARTICULAR PROCEDURE.

MORE COMMON RISKS AND COMPLICATIONS (> 5%) INCLUDE:

- INFECTION, REQUIRING ANTIBIOTICS AND FURTHER TREATMENT.
- MINOR PAIN, BLEEDING OR BRUISING AT THE WOUND SITE
- BLADDER INFECTION, PRESSURE SORES OR BLISTERS

THESE USUALLY SETTLE IN SHORT AMOUNT OF TIME AND IF SO, REQUIRING ONLY MINOR INTERVENTIONS.

RARE COMPLICATIONS INCLUDE:

- HEART COMPLICATIONS (HEART ATTACK, IRREGULAR BEAT)
- STROKE OR STROKE LIKE COMPLICATIONS
- PULMONARY EMBOLISM
- DEATH

UNCOMMON RISKS AND COMPLICATIONS (1-5%), THAT ARE SPECIFIC TO THIS TYPE OF SURGERY INCLUDE:

- DEEP WOUND BLEEDING (MORE COMMON IF ON PRIOR BLOOD THINNERS)
- NERVE ROOT INJURY CAUSING A WEAKNESS OR NUMBNESS
- BLADDER OR BOWEL PROBLEMS DUE TO NERVE ROOT INJURY
- FLUID LEAK FROM SPINAL NERVES COVERINGS (CSF)
- ONGOING PERSISTENT LEG NUMBNESS DUE TO NERVE DAMAGE FROM COMPRESSED NERVE ROOTS.
- ONGOING PERSISTENT BACK PAIN
- DETERIORATION OF OTHER DISCS. THIS MAY REQUIRE FURTHER SURGERY.

- INACCURATE PLACEMENT OF A PEDICLE SCREW, THIS MAY IRRITATE A NERVE ROOT CAUSING PAIN AND/OR WEAKNESS.
- THE TITANIUM RODS OR SCREWS MAY BREAK OR DISCONNECT WHILST THE BONE IS FUSING.
- THE BONE MAY NOT FUSE. THIS MAY CAUSE PAIN AND LOOSENING OF SCREWS OR FAILURE OF IMPLANTS.
- VISUAL DISTURBANCE. THIS MAY BE TEMPORARY OR PERMANENT.
- SMALL AREAS OF THE LUNG MAY COLLAPSE, INCREASING THE RISK OF CHEST INFECTION. THIS MAY NEED ANTIBIOTICS AND PHYSIOTHERAPY.
- IN PATIENTS WITH HIGH BODY-MASS INDEX, INCREASE RISK OF WOUND INFECTION, CHEST INFECTION, HEART AND LUNG COMPLICATIONS, AND THROMBOSIS.
- BLOOD CLOT IN THE LEG (DVT) CAUSING LEG PAIN AND SWELLING.

RARE RISKS AND COMPLICATIONS (< 1%) THAT ARE SPECIFIC TO THIS PROCEDURE INCLUDE:

- PARAPLEGIA FROM A BLOOD CLOT. THIS MAY REQUIRE FURTHER SURGERY AND THOUGH USUALLY TEMPORARY, MAY BE PERMANENT.
- INJURY TO MAJOR BLOOD VESSELS AND NERVES.

MAJORITY OF THE ABOVE COMPLICATIONS ARE USUALLY TEMPORARY AND RESOLVE IN TIME, SOME MAY REQUIRE FURTHER SURGERY TO BE ADEQUATELY TREATED. THEY CAN HAVE LASTING EFFECTS OR PERMANENT IN NATURE.

➤ RECOVERY AFTER SURGERY

THE LENGTH AND EASE OF RECOVERY IS DEPENDENT ON THE PATIENT'S AGE AND THE COMPLEXITY OF THE SURGERY. THE MORE LEVELS OF THE SPINE ARE OPERATED ON, THE MORE OVERLYING MUSCLE NEEDS TO RECOVER, WHICH TAKES LONGER TIME.

THE HOSPITAL STAY IS USUALLY 3-5 DAYS. DURING THIS TIME THE PATIENT RE-ESTABLISH THEIR INDEPENDENCE. WHETHER THE DISCHARGE DESTINATION IS HOME OR INPATIENT REHABILITATION CENTRE, THE SUBSEQUENT 4 WEEKS IS SPENT EXERCISING, WALKING AND ENGAGING IN INCREASINGLY MORE VIGOROUS ACTIVITY. BY 6 WEEKS AFTER SURGERY, THE PATIENT IS USUALLY ABLE TO DO MAJORITY OF ACTIVITIES THEY WISH, BUT WITH DIFFICULTIES. BY 3 MONTHS AFTER SURGERY, THE PATIENTS ARE ABLE TO DO MOST ACTIVITIES WITHOUT DIFFICULTIES.

IN GENERAL, IF THE PATIENT IS LESS THAN 40 YEARS OLD, THE ABOVE TIME ESTIMATES CAN BE HALVED AND IF THEY ARE OVER 80, THEY MAY BE DOUBLED.

➤ PAIN AFTER SURGERY

THE MAJORITY OF PAIN DIRECTLY AFTER AND FOR APPROXIMATELY 4 WEEKS AFTER SURGERY IS DUE TO MUSCLE SPASMS. THIS OCCURS AS THE PARASPINAL MUSCLES RECOVER FROM SURGERY AND SUBSEQUENTLY HEAL BACK INTO PLACE. THE PAIN IS NOT DANGEROUS AND DOES NOT INDICATE ANY WRONG-DOING BY THE PATIENT OR ANY UNDUE EFFECT TO COMPROMISE THE OUTCOME OF THE SURGERY.

THIS PAIN IS WELL MANAGED BY COMBINATION OF UPRIGHT EXERCISE (WALKING), REST IN FLAT POSITION AND ADEQUATE PAIN RELIEF.

THIS WILL ALL BE EXPLAINED DURING THE HOSPITAL STAY AND DURING POST-OPERATIVE REVIEWS.

CONSENT

PROCEDURE, SIDE AND LEVELS:

Patient label:

IT IS IMPORTANT FOR YOU TO UNDERSTAND THE NATURE OF YOUR OPERATION, WHAT WE ARE TRYING TO ACHIEVE FOR YOU AND THE COMPLICATIONS WHICH CAN OCCUR. OCCASIONALLY SOME OF THESE CAN BE QUITE SIGNIFICANT, INCLUDING PERMANENT LOSS OF FUNCTION AND YOU MAY EVEN NEED TO HAVE A SECOND OPERATION. MOST HOWEVER, ARE LESS SIGNIFICANT AND OFTEN TEMPORARY. WE HAVE MENTIONED SOME OF THESE COMPLICATIONS (ABOVE AND BELOW), BUT IT IS NOT A FULL LIST AND OTHER UNFORESEEN CIRCUMSTANCES CAN ARISE. WE WILL TRY AND GIVE YOU AS MUCH INFORMATION AS YOU NEED AND WANT TO HAVE, SO THAT YOU CAN MAKE THE DECISION WHETHER TO PROCEED WITH YOUR OPERATION.

- ☐ UNDERSTAND THE MAIN PRINCIPLES OF THE OPERATIVE PROCEDURE THAT MY SPINAL SURGEON IS TO UNDERTAKE. I HAVE READ THE INFORMATION BOOKLET PREVIOUSLY GIVEN TO ME ABOUT MY OPERATION. I FEEL THAT I HAVE BEEN GIVEN EVERY OPPORTUNITY TO ASK ANY QUESTIONS ABOUT THIS PROCEDURE.
- ☐ UNDERSTAND THAT THE SURGERY IN QUESTION IS NOT A "CURE", BUT IT IS THE NATURE OF SPINAL SURGERY TO EXPECT A GOOD PERCENTAGE IMPROVEMENT. I ALSO UNDERSTAND THAT IMPROVEMENTS MAY NOT BE IMMEDIATE BUT MAY BE GAINED IN THE LONGER TERM. I AM ALSO AWARE OF THE LIKELY OUTCOME IF I DO NOT HAVE SURGERY.
- ☐ UNDERSTAND THAT COMPLICATIONS WHICH MAY OCCUR WITH THIS TYPE OF PROCEDURE INCLUDE: NERVE ROOT INJURY, DURAL LEAK OR SPINAL CORD INJURY; RECURRENCE OF MY PROBLEM; FIBROUS TISSUE FORMATION; INFECTION AND SKIN AND NERVE PRESSURE PROBLEMS. GENERAL ANAESTHETIC AND MEDICAL PROBLEMS MAY INCLUDE CHEST INFECTIONS, URINARY INFECTIONS, AND OTHERS.
- ☐ UNDERSTAND THAT THERE ARE ALSO VERY RARE BUT SERIOUS COMPLICATIONS WHICH HAVE BEEN RECORDED FROM THIS TYPE OF SURGERY WHICH, IN EXTREME CIRCUMSTANCES, MIGHT INCLUDE: DEATH, PARALYSIS, EYE COMPLICATIONS INCLUDING BLINDNESS, SERIOUS VASCULAR INJURY, STROKE AND OTHER SERIOUS ANAESTHETIC AND MEDICAL PROBLEMS.

SIGNATURE:

DATE:
