

To Other Body with That Bone: State of The Art

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Submission: November 08, 2015; **Published:** December 14, 2015

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Abstract

It will be realize a descriptive - correlation, transversal, non experimental, retrospective study, in all of the patients that just have had bone reconstructive surgery in the Orthopedic and Traumatology Unit in the Hospital Alcivar between October 2011 and September 2012. All the theory is based on the concept of bone graft, kind of bone graft, its indications, advantages, disadvantages, and the analysis of our need of the creation of the first institutional Bank of Bones, and it's evidence based in the experience of some hospitals in others countries like Colombia, Brazil, Argentina, Spain and U.S.A. This study will be realize in the way of leasable project and it's support is from the bibliographic research descriptive - correlational, transversal, non experimental, retrospective and in de field research used structure observation and compilation of clinics and functional data guided to all of the patient with diagnosis of bone reconstructive surgery in which requires of bone graft. Besides the scientific advances to improve the posoperatory control of these surgeries, the different kind of bone grafts and the surgery tendencies, the morbidity of these problem is still considerate as a difficult matter in the general medical interested kind of problem. All the patients that have had bone reconstructive surgeries in others Unit of Orthopedic and Traumatology local and foreign will be benefit with this study.

Keywords: Bone graft; Ban of Bones; Bank of tissues and Bones

Introduction

The principles, indications and technical of the interventions for bony grafts it remained well established before the metallurgical age or orthopedic surgery. Due to the need to use material autólogos as bony pegs, roast of wires, the fixation of the grafts was enough bloody. Clamp and Sandhu introduced the internal fixation; Turn white and Kushner, Henderson, Campbell and other added the osteogenesis to this beginning to develop bony grafts for the Seudoartrosis in an intervention practices.

However the 2 principles, fixation and osteogenesis, not combined effective and simply until venous and Stuck started the fixation with screw trees of inert metal (vitalio). In orthopedic surgery it exists each major time claim of bony grafts due to the increment in the number, and the complexity of the surgeries.

To obtain success in your use, they must know to him the different properties of every one of these alternating and of the environment in which are going to be placed. As the bony substitutes and the factors of growth convert to him really clinical, a new golden standard will be defined. The techniques of engineering of tissues and of genial therapy it has as objective it

create a bony best substitute, with a combination of substances that have osteoconductive, osteoinductives and osteogenic properties. The bony grafts are used practically in all aspects of the orthopedic reconstructive surgery and they hatch from the treatment of fractures until complex techniques of saving of extremities in tumorous surgery [1-4].

The grafts have a double function: mechanics and biological. Depending of the clinical result that searches for, one of the functions can be more important than the other. In the interface graft bony-guest exists a complex where multiple report factors can take part in the correct incorporation of the graft; in them/ it it stands out: The area of implantation, the vascularizacion, guest bone interface, inmunogénetica between donating and guest, conservation techniques, local factors and diverse systemic (hormonal, medicine use, bony quality, chronic-degenerative illnesses) and the mechanical properties (that it depend of the size, the form, and type of graft used).

A bench of bones is a specialized organization in obtaining, prosecute, store and distribute bony tissue (graft bony heterologous) humanize, tendons and cartilage, to be used in different surgical reconstructive procedures [5-10].

The history of the bone benches is remounted to the years 1950, when began to function the tissue bench of the marine of the United States, as an answer to the great claim of grafts of produced bone for the wounded soldiers during the war of Korea. This first bench to standardize the techniques of prosecution and storage of bones obtained of corpses, technical still effective and in little time it extended the use of this means to multiple reconstructive procedures of orthopedics and other specialties. In Colombia, the Cosme and Damián foundation, place under 1988 with the objective to foment the transplantations of bone, it developed and put in March the project of the bench of bones and tissues. The bench is the operative being of the Cosme and Damián foundation. It is a private institution, without mind of profit, inaugurated in June 1990, initial related to the Javeriana University and from 1997 to the blessed foundation faith of Bogota. The bench of bones and tissues are the unique thing in Colombia and the first of your genre in Suramenca, for the considerable volume of grafts that distributes and for the meticulous system of prosecution [11-23].

From your creation it has counted with the invaluable lean scientist of the bone bench of the University of Miami that also it collaborated in the creation of the bone bench of the hospital of the blessed house of the mercy in phillyrea it talks. Brazilwood tree With 2 years of functioning this located bone bench in the 5to tread on of the Femandino Simonsen pavilion of Traumatología and orthopedics, furnished and managed with success below the standards of the Latin American society of bench of tissues and bones, unique in the country and distributes to the whole brazilwood tree.

The bone bench of the catalan institute of traumatología and medicine of the sport. Catalonia Spain

This unit is put in March in 1986, jointly with the clinical hospital of Barcelona, and being the first of theses characteristic in the city of Barcelona. Equally are cofounder members of the European Association Tissue Banks of (European association of bench of tissues and bones) [24-36]. At present by following the course of the tecnológicos advances and the new scientific discoveries is imperative that our institution it keeps to the same level, for which through this thesis it wants keep to him the continuity of this bench of tissues, by beginning with bony tissue, and continue with cultivation of tissues and prosecution and storage of mothers cells, and be an institution of elite in the scientific advances of our country, in order that functions according to the norms and standard current and certifications of appropriate quality to a specialist center, since count on the physical area where must function, for which is required the readecuación of the same and the necessary freezers to preserve the bony tissue that will be used in the reconstructive bony surgeries.

This letter of investigation proposes:

- a. A descriptive study-Correlacional, not experimental,

transversal, longitudinal, retrospective, in all patients in those who it is carried out you corrective bony surgeries in the service of Traumatología and orthopedics of the clinical hospital Alcívar from October 2011 to September 2012, and

- b. The presentation of the bone bench of the clinical hospital Alcívar, that is to say the continuity of the previous bench of bones, with a more complete area and updated.
- c. This work follows the sequence of the logical frame for the construction of the variables, in your report with the topic of investigation, the problem, the questioners, the objectives, the hypothesis, the chronogram, the budget, the materials and the collection of data.

This work is current by taking into account the increment of the surgeries being in need of the obtaining of bony graft autologo, in the service of orthopedics and Traumatología as postoperative diagnosis, remaining experiences happinesses and information to benefit the scientific community and of the patients in general.

The Problem

Statement of the Problem

At present the use of bony grafts has returned a habitual practice in the orthopedic surgeries. We border on a reality of reconstructive surgery traumatológica and orthopedic, in the patients that have the need cover bony defects in revision of total artroplasttas, or in tumorous resections for example. The end is to offer you to the patients, tissues obtained and accuseds for our equipment of professionals and in the own hospital, guaranteeing so major confiabilidad, maximum quality and smaller costs [37-39]. The use of grafts is very varied. Only for referring to an example, it can obtain to him a ground of the lay brother bone that it uses as "filling" of bony defects in patients with tumors dried thoroughly or in prosthetic slackening. With the time, the implanted bone, will be replaced for the own bone of the receiving patient. This it is successful thanks to the biological properties of the implanted bone that stimulates the growth of the bone of the own patient.

The progresses of the surgery, especially in the areas of transplants of organs and reconstructive procedures, did necessary design a series of mechanisms to make effective the availability for service of bony tissue human, tendons and skin, of a reliable, sure and sufficient way to satisfy the growing claim in orthopedics and Traumatología [40-43].

The benches of human tissues are a few sanitary resources, of relative recent development throughout the world, sprung up for iniciativa of the professionals of orthopedic surgery and Traumatología, as an instrument to supply the surgical needs of biological material, obtained of alive donor and used for the own service. halfway through the decade of the years 1980 and already in the middle of apogee of the transplantation, the figure of the hospitable coordinator is instituted of tms plant, that

professionalize the process of gift and maintenance of the donor. This decides an increment of the number of donors of organs and At the same time offers the possibility of disposes of tissues and the obtained scientific advances in this excel, some tissue benches transform and dimensional as construct complex and professionalize that prosecute, preserve and distribute diverse types of tissues to the centers of implanting.

While in some benches produces to him this transformation, other bony tissue benches of internal use and with reasonable tissue of a live donor it keeps the initial funcionalidad and the objective for which were created [44-49]. In Europe, the normative specific first destined to the benches of date tissues of 1994, year publishing the R 94 recommendation of the minister committee of the member's states of the Europe advice on benches of human tissues, exposing the ethical and legal criterions that must be observed.

Previously, the activities related with the human tissues and with them/it the benches of tissues, they steered for the European dispositions broadcasted for the relative activities to the transplants in general, resolution 29, that establishes the criterions to harmonize the legisalcion of the members states on obtaining, implants and transplants of human substances and the recommendation 5 relative to the transport and interchange International of human substances.

In equator, the normative first for the gift of organs was created for the Ecuadoran society of transplantation of organs and woven in the year 1994: NO. LAW58 the who has not finished even the process of execution. At present the LEY of DONACION and DE ORGANOS DE LA TRANSPLANTATION CONSTITUCION DE EL 2008 is the effective thing. Although initial the bench is nourished of bony reasonable excerpts of the prosthetic implantation, that is to say, femoral middlingses, tibial platforms and femoral condyles, the good obtained results have increased the resources through the aloinjertos, that is to say, those reasonable of other human being, having increased also the applications, as will see afterwards. A single donor can benefit until 250 peoples that will receive a transplantation of bone. Thanks to the tissues obtained of altruistic donors it can enormously improve to him the quality of life of the patients when avoiding amputations, principally in the case of patients with cancer of bone.

At present in the Clinica Alcivar hospital of the city of Guayaquil, it is carried out in the service of Traumatología and orthopedics but of 200 surgeries in this period 2011-2012 and 41 patients in those who is to use of bony graft obtained autólogo of iliaca crest. It is avoided the need to carry out other surgical wound to obtain bone of the same patient by avoiding with it ache, risk of infection, injure arterial and nervous, as well as diminution of the surgical time and the bled. With the objective to know our own casuistry, the related factors with the morbidity and the need of evaluating better to the postoperative patient. In this study will demonstrate the importance to know the factors to value in the

scale and estimate by means of the same the quality of life in these patients.

Objectives

General Objective

Analyzing the development of reconstructive surgeries in the clinical hospital Alcivar in the October period 2011 to September of the 2012 and present the updated institutional bone bench.

Specific Objectives

1. Analyzing the complications presented for every one the techniques.
2. Deciding the pathologies being to be accustomed graft of bench of bone.
3. Deciding the age and the sex of the patients being to be accustomed graft of bench.

Justification of the Problem

This investigation is carried out due to that at present, in orthopedic surgery bony grafts are used to supply the need in the patients needing to correct bony defects for surgeries as: revision of artroplastias, bony resection for tumors, etcetera, and it tries to get use to him the graft. This investigation serves to revise the surgeries of bony reconstruction and with the results to propose the creation of a bench of bones; it is going to be benefited the institution when creating a bench of bones that is about to benefit to the community with the objective to decrease the comorbilidad of the obtaining of these in the patient and the graft of bench is used of bones. The patients will be beneficiaries inasmuch as are about to have a recovery of your physical defects that is about to permit you take a better quality of life, by improving your autoestima; the community in general and the orthopedic group particularly are the beneficiaries of the results of the present study. All this does necessary the realization of this study to improve the conditions of the patient and choose the graft of bench of bones according to the norms established for the service of Traumatología and orthopedics of our hospital.

Theoretical Frame

Oseo Graft

In an initial way it must decide to him which is the function that it must fulfill the graft to use.

The grafts have different properties:

Osteogenesis: Synthesis of bone new as of cells derived of the graft or of the guest. It requires cells capable of generate bone.

Osteoinducción: Processes for which the mesenchymal mother cells are recruited in the receiving area and to your around to differentiate in condroblastos and osteoblasts. The differentiation and the recruitment are modulated for factors of by-proucts growth of the matrix of the graft, whose activity is stimulated

when extracting the bony mineral. Between the factors of growth find to him the morfogeneticas proteins bony [7], and factor of by-product growth of the blood platelets, interleukinas, factor of fibroblastic growth, growth factors pseudoinstitutino, factors stimulative of the colonies of granulocytes-macrophagic. Also free angiogenic factors, as the factor of vascular growth by-product of the endothelium and the angiogenina.

Osteoconducción: Processes in which take place a three-dimensional growth of capillary, peri tissue vascular and mesenchymatous mother cells, from the receiving area of the guest towards the graft. This andamiaje permits the formation of bone new by means of a foregone owner, certain for the biology of the graft and the mechanical environment of the guest interfase-graft. In an ideal way a bony graft must have these three properties, besides be biocompatible and provide biomechanics stability.

The bony grafts can be employed with the following end:

- a. To fill cavities or resultant defects of cysts, tumors or other causes,
- b. Establishing a bridge in the questions causing so a arthrodesis,
- c. To fill defects important or establish the continuity of a bone largo.
- d. Providing bony blocks to limit the articular mobility.
- e. Establishing the consolidation in a Pseudoartrosis.
- f. Stimulating the consolidation or it fills up the defects in the consolidation,
- g. Structure of the grafts.

The grafts of cortical bone are employed principally as structural support and those of osteoporoso bone for the osteogenesis. The structural support and the osteogenesis can be combined; this is one of the first advantages of the use of a bony graft. However, these two factors varied with the structure of the bone. Probably all or most cellular elements of the grafts (above all of the cortical grafts) die and are replaced for elect new formed, acting simply the graft as guide frame for the formation of a new bone. In the cortical hard bone this process of substitution is considerably slower than in the spongy bone. Although the spongy bone is more osteogénico, is not resistant enough to offer a structural effective support. When it selects the graft or the combination of grafts, the surgeon must remember these two differ fundamental in the bony structure. Once the graft has incorporated to the guest and is strong enough toes to permit the use not protected of the part, it takes place the remodelacion of the bony structure in proportion with the functional claims.

Origin of the grafts: autologous grafts: When the bony grafts proceed from the patient generally it is extracted of the tibia, fibula or ilium. These three bones provide cortical grafts, transplantations of complete bone and spongy bone, respectively.

If not use elements of internal fixation or externals, which at present is strange, is necessary the resistance in a used graft to repair a defect in a long bone or even for the treatment of a pseudoartrosis. The expensive anther-medial subcutaneous of the tibia is an excellent source of these grafts. In the adults, after obtaining a cortical graft the tibial plateau provides spongy bone. Apparently not has not advantages leave the united periosteum to the graft; however, yes it has clear advantages the suture of the periosteum on the defect. The periosteum appears act as limiting membrane to avoid an irregular callus when the defect of the tibia it fills up with bone new. The little bony cells that are broke with the periosteum can facilitate the formation of the necessary bone to fill up the defect.

The employment of the tibia as donating area has inconvenient:

1. It is put in danger a normal member;
2. The obtaining of the graft extends the duration and magnitude of the intervention;
3. Extends the convalescence and the walking must be delayed until the defect of the tibia is partially consolidated, and
4. The tibia has to be protected during 6-12 months to avoid the fractures. For these reasons, at present the structural autoinjertoses of going lukewarm rarely use.

The two proximal thirds of the fibula can be extirpated without altering materially the leg. But a study of Core and addition, it indicates that most patients will have annoyances and muscular weakness weighs after extirpating a part of the fibula. The configuration of the extreme proximal of this bone is an advantage: the proximal extreme has a rounded prominence that it is cover partially for hyaline cartilage, constituting so a satisfactory transplantation to substitute to the distal third of the radius or to the distal third of the fibula. After the transplantation the hyaline cartilage probably degenerates with rapidity in a fibrocartilaginous surface; even so, this surface is preferable to the naked bone.

The third intercedes of the fibula it also can be employed as free auloinjrlo, vascularizado, based on the formed peduncle for the artery and peroneal vein, employing a technical microvascular. Simonis, Shiral! and Mayou recommends this graft for the treatment of the big defects of the congenital pseudoartrosis of the tibia. Also they can be used excerpts of Ilian crest as free vascularizado autoinjerto. The employment of the free vascularizados autoinjertoses has limited indications, is necessary an expert technical microvas

Cular and lack of pathology in the donating area.

A. Alogénicos grafts: The alogénico graft or afoinerfo is obtained of a different person of the patient. Before the development of the bone bench (v. exposition following) the aloinjertos employed only if not disposed of to him

autologous grafts or when it had inconvenient for your use. In the small children's the donating habitual points not provide cortical big enough grafts to cover the defects, or the spongy available bone may not be sufficient for hayfield a big cavity or a cyst; moreover, it must be had in account the possibility to injure a fisis. For it, the grafts for young children generally it is obtained of the father or of the mother. During many years they have used with aloinjertos success structural elders in the articular total surgery of revision and in the reconstruction after the extirpation of a tumor. At present it is employed with certain success in some centers the osteocondrales aloinjertos to treat the femoral distal osteonecrosis.

B. Heterologous grafts: Due to the undesirable characteristics of the bony grafts autologos and alogenicos, the heterologous bone, that is to say, the free bone species, I rehearse to the beginning of the development of the bony grafts and it is seen that almost always it was unsatisfactory. The material kept more or less your original form, acting as internal ferule, but without stimulating the production of bone. These grafts many times caused an undesirable reaction of strange body. The material of heterologous graft continuously satisfactory is not still commercially available and not recommends to him your use.

C. Substitutes of the spongy bone: The hidroxiapatita and the calcium phosphate, material synthetic and natural, are using at present as substitutes of the grafts of spongy bone in certain circumstances. These porous materials are invaded for the blood vessels and the osteogénicas cells, provide a guide frame for the formation again bone and, in theory, finally are substituted for bone. Your main utility is to fill the spongy defects in places where the existence of the graft is not important. Bucholz and cois, it found in the hidroxiapatita and in the material calcium phosphate to be alternating effective of the spongy grafts autólogos to graft onto the fractures of the tibial plateau. It been carried out recently clinical trials with a synthetic substitute of composite bone of two-phase ceramics (60 % of hidroxiapatita and a 40 % of calcium phosphate) more collagenous bovine I type, call in a commercial way Collagraft (Zimmer, War-saw, Ind). Chapman and cois, find that the Collagraft can replace in an effective way to the autogenous grafts in the treatment of the fractures of long bones subdued to surgical stabilization. They produced to him antibodies anticologeno bovine in less of 3% of the patients and without complications. The Collagraft is mixt with 2.5-5 ml of an aspirate of taken oblongated marrow of the Ilian crest just before your use.

This substitute is recommended for bony smaller defects to 2 cm they find to him at present available a great number of substitutes Osteo-inductive cathedral churches and other many are in process of analysis in different clinical trials.

The bony grafts classify shapes your origin:

AUTOINJERTO OSEO

ALOINJERTO OSEO

XENOINJERTO OSEO

The process of incorporation of a bony graft is a mechanism complex that it varied depending of the place of placing and the type of used graft.

It divides in 3 phases:

A. Phase Early: 1 A 3 membranous ossification weeks in the adjacent area to the cortical bony and the conversion of the post hematoma operative in fibroblastico stroma about the graft.

B. Intermediate Phase: 4 A 5 weeks: incorporation and remodelación of the graft with a central cartilaginous area and endocondral ossification about the same thing.

C. Late Phase: 6 A 10 weeks: major quantity of bony marrow information of cortical bone about the central area and remodelación ósea.

Typical risks of the procedure of the obtaining of the oseo graft:

All surgical intervention so much for the own operative technique, as for the vital situation of each patient (diabetes, suffering from a heart disease hypertension, old age, anemia, obesity) takes implicit a series of common and potentially serious complications that could require complementary treatments, both medical and surgical, as well as a minimum percentage of mortality.

The possible complications of the obtaining of bony graft autólogo are:

- a) Infection to level of the surgical wound.
- b) Lesion vascular,
- c) Lesion or affectation of some nerve that can cause swindler or definitively, sensitive or motor alterations, specially the femorocutaneo nerve when it extracts of the iliaca crest.
- d) Fracture of the manipulated bone.
- e) Persistent ache in the donating region.
- f) Painful or hypotrophic scar.
- g) Alteration of the relief of the iliac crest.

Advantages of the Autoinjerto

- A. The integration is the higher thing with respect to any other bone.
- B. Not has not risk of transmission of infected contagious

illnesses.

Disadvantages of the Autoinjerto

- 1) The quantity, forms, size and anatomic places are limited for the capacitance to obtain in the same individual a part of your body to apply it in other place of the same thing.

Increase in the morbidity for

- i. Prolongation of the surgical time for the protocols of asepsis, antisepsis and takes of the autoinjertos.
- ii. It is necessary the use of multiple boardings to obtain the autoinjertos with the unavoidable for life scars.
- iii. Bled major.
- iv. Technically more difficult to them is in need of approach critical areas.
- v. With an increment in the surgical time and in the anesthetic, surgical risk and bled. It presents to him frequently the ache as main symptom in the bestowing places of autoinjerto, you injure neurovascular and fractures in the bestowing place.

Advantages of The Aloinjerto

- a) Anatomic limitless quantities, sizes, forms and places, likewise the possibility to save extremities that before it is amputated or carry out surgeries that previously was not possible or that well it culminated with severe sequels.
- b) Diminution in the morbidity to the has not to use other boardings.
- c) Smaller cost to decrease surgical times, material of asepsis, antisepsis, clothes, material of consumption, suture material, honorary of surgeon, anesthesiologist and personnel of operating theater, smaller use of plot anesthetic, surgical apositos
- d) , cures and withdraw of material of suture; as well as a more quick return to your habitual or labor activities, without depending so much of help. Likewise the employ biological materials of cost minor that tumorous prosthesis and prepares to future to the patient to receive in the case of being necessary it implants of a cost a lot of minor.
- e) Immediate availability for service, it can request in advance or have it in stock in operating theater.
- f) Bioseguridad, the risk to transmit a infectocontagiosa illness is of 1:1;670.000 applied grafts when it is carried out all established protocols.

The aloinjertos that find to him available for your distribution are frozen or freeze-dried: masivos bones, fractional, in chips, granulated, pulverized, desmineralizadossed; extensive tricortical

, bone, tendon, bone, Achille’s tendon and fascia pad, these is in demand for internet or for phone path of any city of the country.

Types of grafts and suggested uses describe two functional categories:

- a. Aloinjertos structural (masivos) have form and anatomic contours definitions and can support a mechanical exigency (compression, tension, flection, etc.) from the moment of the implantation, being the progressively major resistance as advances the process of consolidation and osteo-transportation. Secundarily they have osteogénicas properties. Characteristic example the distal femur osteocondral, femoral condyle, femoral diafisario segment.
- b. Aloinjertos not structural: it are preparations principally osteoinductoras, it lack of form defined therefore not have not mechanical properties. Typical example is the ground corticoesponjoso.

Corticoesponjoso ground: (Figure 1) presented in bags of 32 gr. Preserved for freezing. Suggested uses: filling of cysts or intraóseos, pseudoartrosis or delays defects of consolidation when you are impossible to obtain autoinjertos. But, of what it deals with in itself a bench of bones? it can sum up in 5 steps: selection of the donor, tissue obtaining, prosecution, preservation and application of the same.

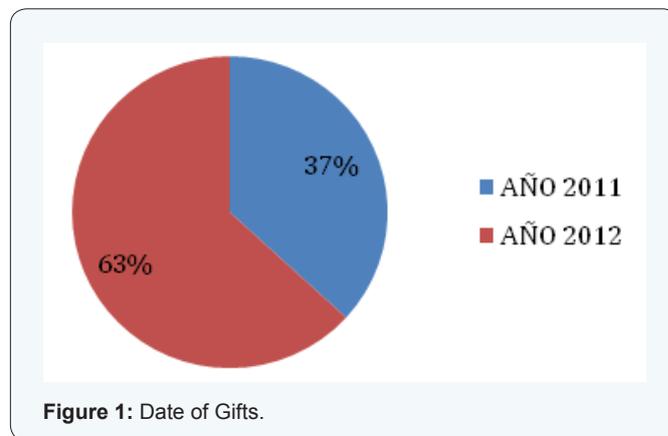


Figure 1: Date of Gifts.

The donors can be

- A. **Alive donors:** in general patient that it are subdued to a total replacement of hip and whose femoral middlings will be extracted for the placing of an orthopedic prosthesis this bony piece, that otherwise is discarded, it uses only if the patient has expressed your consent. when entering to the bench is prosecuted and sterilized, can then be implanted in other patient
- B. **Cadaveric, system that is coordinated according to the legislation on gift of organs of each country.** Both classes of donors to be accepted as someone must pass rigorous control serológicos and have a capable clinical

record. The tissue benches are organizations without end of profit, and the gifts are acts of solidarity. Likewise the cost for the receiver only includes the expenses of accused and of personnel that permits you to the bench to continue with your functions. The bench must count on a hall of accuseds mounted in the area of operating theaters that must be a sterile area and it counts on freezers of besides low temperature for the preservation of this bony tissue, built and furnished by following the international norms of Calidad ISO 9000.

Indications of INJERTOS EN CIRUGÍA orthopedic

- i. Replacement of bony defects in tumorous resections enlarges.
- ii. Filling of bony defects intracavitarios.
- iii. Revision of artroplastias of hip and knee.
- iv. Reconstruction of big bony defects for trauma.
- v. Osteogenesis in cases in those who the autoinjertos be insufficient.
- vi. Articular reconstructions, remplazando for example condyle units-tibial plate in the affected knees for osteoarthritis or severe trauma.

Materials and Methods

Materials

Place of the investigation

Clinical hospital Alcivar of the city of Guayaquil Ecuador, service of Traumatología and orthopedics, consults externals, operating theater and hospitalization of Traumatología and orthopedics.

Period of the Investigation

Study to carry out during the period of October 2011 until September 2012.

Human resources

Dra.Tania Alvarado Chávez

Physical resources

- a. Personal computer.
- b. Printing machine
- c. Block of sheets of A4 size bond paper.

The economic materials are used according to the development of the thesis and your sum of budget is simple offs to estimate according to: 1. The quantity of 1000 sheets of used bond paper:

- a. for printing of chronograms and refer to bibliographical of Internet;

- b. Printing of several drafts, it project and it inform end with your respective copies.

Universe and shows

To this study they entered all patients of the service of orthopedics and Traumatología of the Clinica Alcivar hospital they went taken part in surgical and that required of bony graft of bench of bones and that previously carried out your admission.

Of the universe of patients will choose the sample for the determination of epidemiológicos data as: hospitable age, sex, localization, origin, previous pathology, type of bony graft used periods of surgical production and so as of the comorbilidad of the same thing.

Methods

I. Type of Investigation

Descriptive-correlacional.

II. Design of The Investigation

Notexperimental collateral relative, longitudinal retrospective, in all patients in those who it is carried out you corrective bony surgeries in the service of Traumatología and orthopedics of the Clinica Alcivar hospital from September 2011 to September 2012.

Study and analysis of Results

In this work carries out to him an analysis in all patients in those who it is carried out you corrective bony surgeries in a Service of Traumatología and orthopedics of the regional hospital IESS or Dr. Teodoro Maldonado, from January 2006 to October 2007. As conclusion in base to the study of the casuistry and by the virtue of the data gathered through the revision of the clinical expedients and it hugs the coast carried out in those which measured to him the affected variables and provided for the department of statistics of the "Teodoro Maldonado Garbo" hospital has obtained the following:

Discussion

The present study has had as basic objective the show the obtained results in the epidemiology of the surgery of bony reconstruction as of graft bony of bench of bones, according to the type of employee technique, to the surgical time, and to the existence of comorbilidad that it has been 0%. With the graft of bench avoids to him the need to carry out other surgical wound to obtain bone of the same patient by avoiding with it ache, risk of infection, injure arterial and nervous, as well as diminution of the surgical time and the bled. Have clear according to the different publications the advantages and disadvantages of the edict graft, is undoubted that the MAYOR VENTAJA ES

- The integration is the more high thing with respect to any other bone.

- Not has not risk of transmission of infected contagious illnesses.

However it is decisive the disadvantage as for the election of graft of bench of bones

The quantity, forms, size and anatomic places are limited for the capacitance to obtain in the same individual a part of your body to apply it in other place of the same thing.

Increase in the morbidity for:

- Prolongation of the surgical time for the protocols of asepsis, antisepsis and takes of the grafts edict.
- It is necessary the use of multiple boardings to obtain the grafts edict with the unavoidable for life scars.
- Bled major.
- - Technically more difficult to them is in need of approach critical areas.

With an increment in the surgical time and in the anesthetic, surgical risk and bled. It presents to him frequently the ache as main symptom in the bestowing places of autoinjerto, you injure neurovasculares and fractures in the bestowing place.

With the graft of bench we eliminate all disadvantages of the edict graft

Advantages of The Aloinjerto

- Anatomic limitless quantities, sizes, forms and places, likewise the possibility to save extremities that before it is amputated or carry out surgeries that previously was not possible or that well it culminated with severe sequels.
- Diminution in the morbidity to that has not to use other boardings.
- Smaller cost to decrease surgical times, material of asepsis, antisepsis, clothes, material of consumption, suture material, honorary of surgeon, anesthesiologist and personnel of operating theater, smaller use of plot anesthetic, surgical apositos, cures and withdraw of material of suture; as well as a more quick return to your habitual or labor activities, without depending so much of help. Likewise the employ biological materials of cost minor that tumorous prosthesis and prepares to future to the patient to receive in the case of being necessary it implants of a cost a lot of minor. The immediate availability for service, can request in advance or have it to him in stock in operating theater after have it in demand in the bench.

The first published studies in report to the transplants of bones and tissues for the COOR review. Bone & cartilage transplantation. April 1983. (4) it is refered to the indications

specify of the use of bony grafts and the handling of the same thing in bench of tissues as long as fulfilling the standards to avoid the more frequent complication than it is the infection. At present it studies obtains an incidence of 15 % of infection of the wound of obtaining of the graft it who confirm it the published studies about the matter [5], and 100% of patients it presented ache in the wounded related complication in all carried out studies on graft bony autologo however the advantage of osteointegración is undoubted according to refers it Habal & Reddi. W.B. Saunders concern the year 1992 in your article on bony grafts and bony substitutes. At present in orthopedic surgery the conduct to follow as for boardings is the minimum invasive and minimum desperiostizacion that is to say preserve possible better the vascularizacion of the periosteum with minimum boardings for the internal fixation, bony resection etcetera. With the use of graft of bench we eliminate other incision and in turn we shorten the surgical time by reducing the time of anesthesia and therefore the time of hospitalization of the postoperative, it who benefits to the patient and in turn to the institution.

Conclusion

The surgeries of bony reconstruction with use of graft autologo constitute 1.8% of the total of orthopedic surgeries carried out in our casuistry. The presentation of complications of a surgery of bony reconstruction with being accustomed grafts autologo in your major presentation is the ache and later the infection. The pathologies in those who are used bony graft autólogo am the same indications can use graft of bench of bones. The legal frame of organic law on transplantations of bones and tissues and the ONTOT, has accredited us as transplants and winning of Organoz (Figures 1-14).

- a) It Count on the Physical Area Privy for the Implementation of The Bone Bench.
- b) We Count on the Freezers in The National Market, necessities for the Bone Bench.
- c) We count on the personnel of human resources necessities to activate the bench of bones.



Figure 2: AÑO 2011 Gifts.

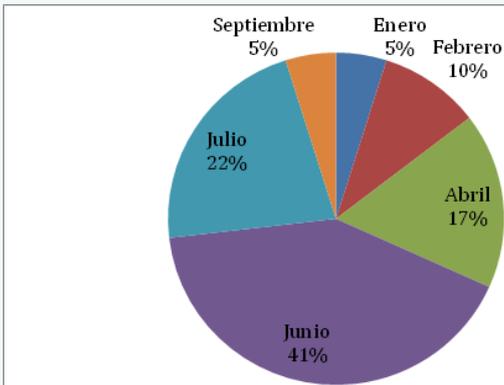


Figure 3: AÑO 2012 Gifts.

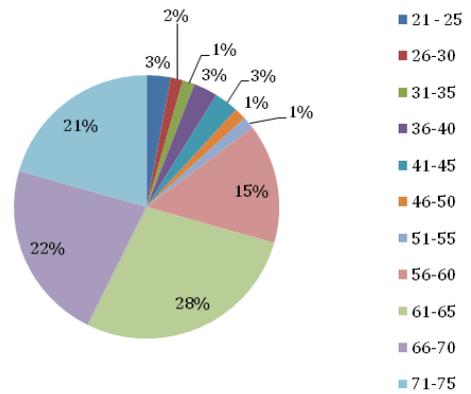


Figure 4: Donantes Por Edad.

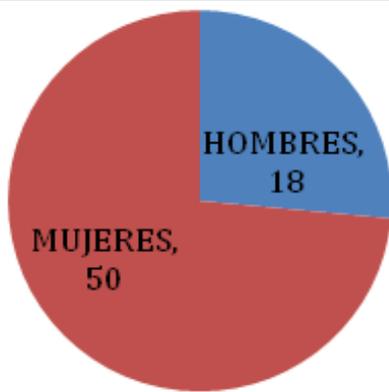


Figure 5: Women V Men.

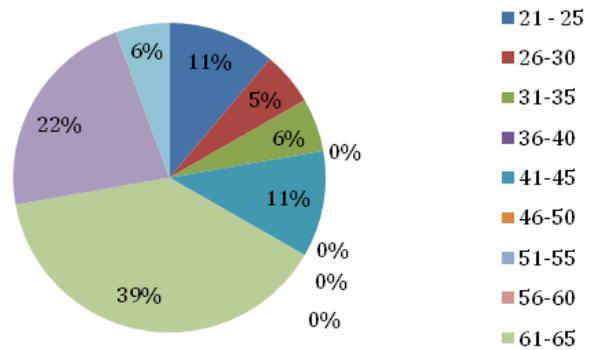


Figure 6: Donating Men For Ages.

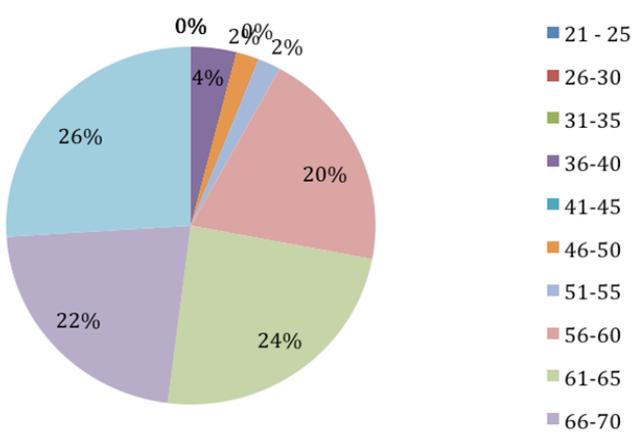


Figure 7: Donating Women For Ages.

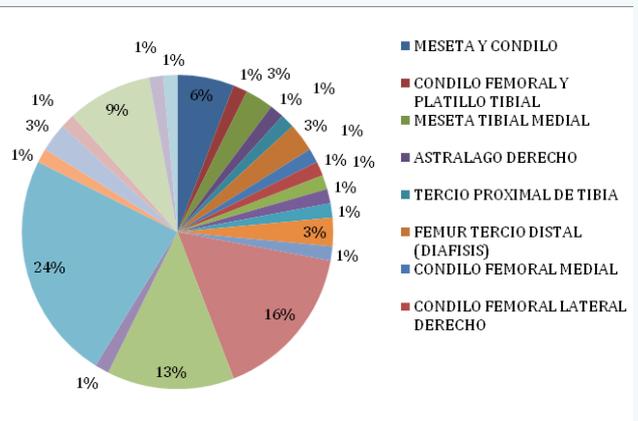


Figure 8: Extracted Excerpt.

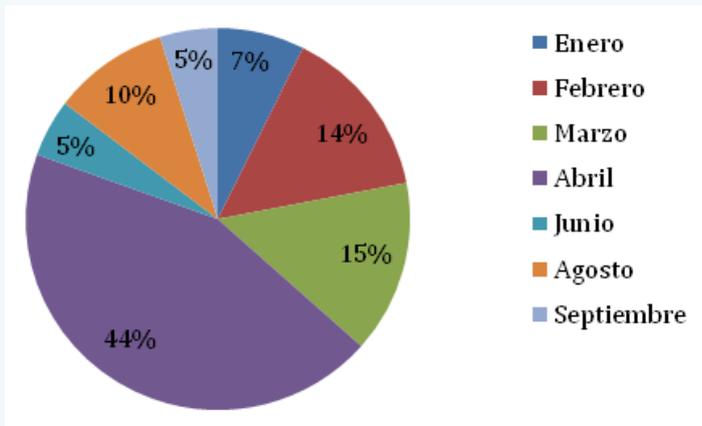


Figure 9: AÑO 2012.

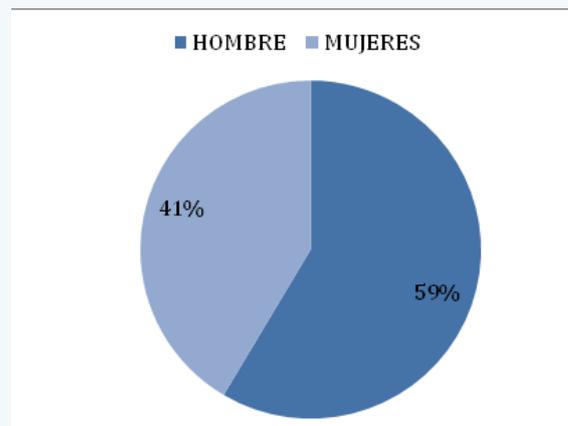


Figure 10: Reception.

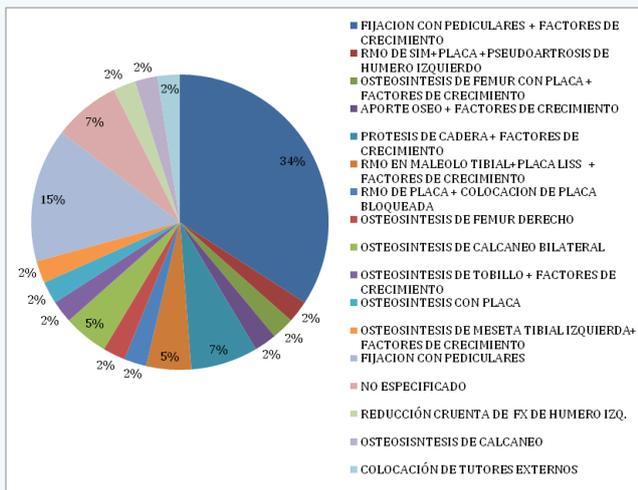


Figure 11: Treatments.

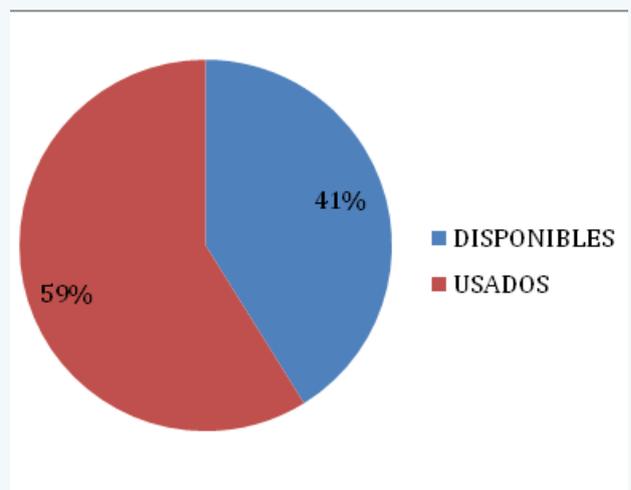


Figure 12: Quantities of Excerpts.

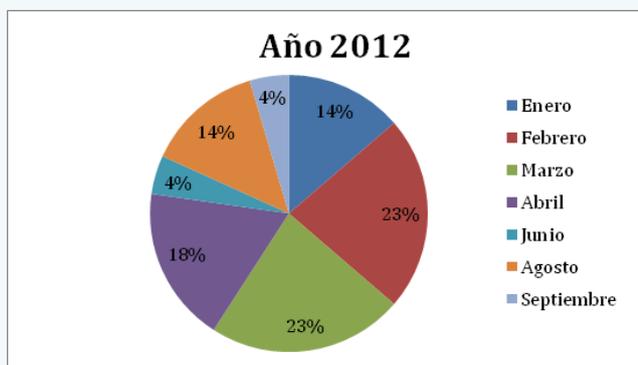


Figure 13: Available Excerpts.

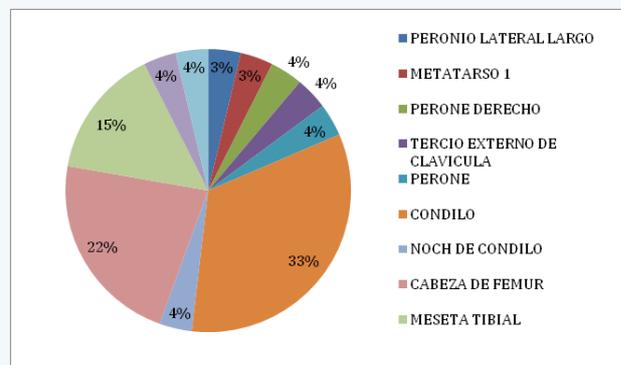


Figure 14: Elaborate by TACH.

Recommendations

Optimizar the appropriate procedure for implementar in a future not single the female offender of bench of bones but also bench of tissues continuing the follow-up of the placed under government control patients being to be accustomed graft of bench according to current protocols it departs from the period qualified the area of the bone bench.

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