

**International Journal of Recent Research in Arts and  
Sciences ISSN: 1857-8128**



**MIT  
UNIVERZITET  
SKOPJE**



**JOURNAL**

**International Journal  
of Recent Research in  
Arts and Sciences  
Volume 20**

**Skopje, Republic of North Macedonia**

**March, 2025**



**International Journal of Recent Research in Arts and Sciences**

**ISSN: 1857-8128**

**Owner and General Manager**

**MSc Biljana Apostolova**

**Marketing Manager**

**MSc Bozjidar**

**Mladenov**

**Editor in Chief**

**PhD Marjan**

**Madjovski, MIT**

**University**

**Lecture in English**

**Anita Dimitrijovska-**

**Jankulovska**

**EDITORIAL BOARD**

**Zvonimir Jankuloski**, PhD, MIT University Skopje, Macedonia

**Antonio Georgiev**, MD, MSc, PhD, Faculty of Medicine, University “Ss. Cyril and Methodius” - Skopje, Republic of North Macedonia

**Berta Gonzalvo**, PhD Mechanical Engineering Macedonia

**Branislav Mitrovic**, PhD, University of Belgrade, Belgrade

**Rusana Manceva**, PhD, Southwest University - Neofit Rilski, Blagoevgrad, Bulgaria

**Sinisha Zaric**, PhD, Economic faculty, Belgrade

**Daniela Georgieva**, MD, MSc, PhD, University Clinic for Orthopedic Surgery; Clinical Center “Mother Teresa”- Skopje; “Ss. Cyril and Methodius University” Skopje, Macedonia



MIT UNIVERSITY  
SKOPJE

**International Journal of Recent Research in Arts and Sciences**

**ISSN: 1857-8128**

**Dariusz Majchrzak**, PhD, National Defense University, Warsaw, Poland

**Ejup Chota**, PhD, University of Tirana, Plan Protection Department, Albania

**Elizabeta Popova Ramova**, PhD, MIT University, College of Wellness, Spa and Physiotherapy, Skopje, Macedonia

**Gabriela Dragan**, PhD, Romanian American University, Bucharest, Romania

**Georgi Georgiev**, PhD, New Bulgarian University, Sofia, Bulgaria

**Herba Safeyedin**, PhD, House of Egyptian Architecture, Cairo, Egypt

**Igor Maric**, PhD, Institute of Architecture and Urban&Spatial Planning of Serbia, Belgrade

**Ilija Nasov**, PhD, MIT University Skopje, Macedonia

**Karol Janas**, PhD, Alexander Dubcek University of Trencin, Slovakia

**Kresimir Rotim**, PhD, University of Zagreb, Faculty of Medicine, Zagreb, Croatia

**Lidija Geto**, PhD, University Josip Juraj Strossmayer, Osijek, Croatia

**Magdalena Punceva**, PhD, MIT University, Faculty of Security Sciences, Skopje, Macedonia

**Maja Jakovcevski**, PhD, University of Kraguevac, Faculty of Medicine, Kraguevac, Serbia

**Magdalena Cara**, PhD, University of Tirana, Plan Protection Department, Albania

**Mila Pucar**, PhD, Institute of Architecture and Urban&Spatial Planning of Serbia, Belgrade

**Milica Denkovska**, MA, MIT University Skopje, Macedonia

**Mirjana Devetakovic**, PhD, University of Belgrade, Faculty of Architecture, Belgrade

**Mirjana Jovanovska Stojanovska**, MIT University, Faculty of Psychology, Skopje, Macedonia

**Nenad Mikulic**, PhD, Polytechnic of Zagreb, Zagreb, Croatia

**Niko Herakovic**, PhD, University of Ljubljana, Faculty of Mechanical Engineering, Slovenia

**Patrizia Cinelli**, PhD in Chemistry at Pisa University, Italy



MIT UNIVERSITY  
SKOPJE

**International Journal of Recent Research in Arts and Sciences**

**ISSN: 1857-8128**

**Recep Guloglu**, PhD, Istanbul University, Istanbul, Turkey

**Safak Sahir Karamemetoglu**, PhD, Istanbul University, Istanbul, Turkey

**Susana Paixão**, PhD, Polytechnic of Coimbra/Coimbra Health School, Portugal

**Svetlana Dushanich Gachic**, PhD, Banja Luka College, Bosnia and Herzegovina

**Stipica Popovski**, PhD, MIT University, Faculty of Dental Medicine, Skopje, Macedonia

**Teuta Gjuladin-Hellon**, PhD, Faculty for Food Industry, England

**Vladan Djokic**, PhD, University of Belgrade, Faculty of Architecture, Belgrade



## CONTENTS

### Natural and Technical-technological Sciences

<b>LIPID MARKER APOLIPOPROTEIN A1 AS A PREDIKTOR FOR CORONARY ARTERY DISEASE IN PATIENTS WITH TYPE 2 DIABETES MELLITUS WITH AND WITHOUT DIABETIC NEPHROPATHY.....</b>	<b>9</b>
<b>CORRECTIVE OSTEOTOMY OF THE FIBULA IN POORLY HEALED BIMALLEOLAR FRACTURE.....</b>	<b>29</b>
<b>EPIDERMOID INCLUSION CYST – CASE REPORT.....</b>	<b>36</b>
<b>EVALUATION OF TOTAL BLOOD LOSS AFTER ADMINISTRATION OF TRANEXAIC ACID IN TOTAL HIP ARTHROPLASTY.....</b>	<b>44</b>
<b>USE OF FREE GINGIVIAL GRAFT TO RESOLVE GINGIVAL RECESSON OF LOWER INCISORS - CASE REPORT.....</b>	<b>55</b>
<b>PERSISTENT FORAMEN OVALE AS A CAUSE OF CEREBRAL STROKES IN YOUNG INDIVIDUALS - CASE REPORT .....</b>	<b>66</b>
<b>MUCOCELE OF THE APPENDIX .....</b>	<b>77</b>
<b>MULTIPLI VENTRICULAR SEPTAL DEFECTS – A CASE REPORT.....</b>	<b>82</b>
<b>USING A STICKY BONE FOR GBR AND SOCKET PRESERVATION.....</b>	<b>90</b>
<b>PYOGENIC GRANULOMA OF THE GINGIVA - CLINICAL CASE REPORT.....</b>	<b>99</b>



<b>SURGICAL TREATMENT OF RADICULAR CYST IN MAXILLA - A CASE REPORT .....</b>	<b>107</b>
<b>VITAMIN C FOR HEALTHY SKIN.....</b>	<b>116</b>
<b>HEALTH BENEFITS OF INDIVIDUAL STRUCTURES OF THE RASPBERRY PLANT.....</b>	<b>130</b>
<b>WELLNESS AND SPA THERAPY FOR ADOLESCENTS AND CHILDREN AS COMMUNITY THERAPY FOR IMPROVING MENTAL AND PHYSICAL HEALTH.....</b>	<b>142</b>
<b>METHODOLOGICAL APPROACH TO REACTIVATION OF URBAN SPACES.....</b>	<b>154</b>
<b>ATTITUDES OF MEDICAL PERSONNEL TOWARDS ORGANIZATIONAL CHANGES IN HEALTH ORGANIZATIONS IN R.N. MACEDONIA.....</b>	<b>170</b>

## **Social Sciences and Humanities**

<b>CRIMINAL PROFILING: THEORY AND PRACTICE .....</b>	<b>180</b>
<b>THE SILENT ENGINE OF SUCCESS: MANAGING COMMUNICATION IN MODERN ORGANISATIONS.....</b>	<b>194</b>
<b>SISTERHOOD BY DINA DUMA: EXPLICIT FEAR FROM THE CONTEMPORARY COMMUNICATION FORMS.....</b>	<b>205</b>



MIT UNIVERSITY  
SKOPJE

International Journal of Recent Research in Arts and Sciences

ISSN: 1857-8128

<b>THE IMPACT OF DRUG ABUSE .....</b>	<b>229</b>
<b>THE IMPACT OF RISING INFLATION ON DIFFERENT INCOME GROUPS AND ITS EFFECT ON DEBTORS AND SAVERS .....</b>	<b>269</b>
<b>CHILD TRAFFICKING.....</b>	<b>279</b>
<b>SWOT ANALYSIS AS A METHOD OF STRATEGIC PLANNING .....</b>	<b>309</b>
<b>THE IMPORTANCE OF FORMULATING THE STRATEGY FOR THE OPERATION OF THE ENTERPRISE.....</b>	<b>321</b>
<b>ELEMENTS OF RESIDENTIAL SPACE .....</b>	<b>337</b>
<b>IMPORTANCE OF MOTIVATION IN THE LEARNING PROCESS.....</b>	<b>353</b>
<b>HISTORICAL DEVELOPMENT OF TAXES .....</b>	<b>371</b>
<b>CRITICAL NOTES ON JEAN PIAGE'S THEORY: EGOCENTRISM AND CENTERED THINKING IN CHILDREN IN THE PREOPERATIONAL PHASE OF COGNITIVE DEVELOPMENT .....</b>	<b>386</b>
<b>RELATIONSHIP BETWEEN SOCIAL MALADAPTATION AND ANXIETY IN HOSPITALIZED PATIENTS WITH CYSTIC FIBROSIS .....</b>	<b>406</b>
<b>THE ROLE OF THE FAMILY AND THE PARENTAL STYLE IN THE PSYCHOSOCIAL DEVELOPMENT OF ADOLESCENTS .....</b>	<b>415</b>
<b>JUSTICE AND EQUITY.....</b>	<b>426</b>



## CORRECTIVE OSTEOTOMY OF THE FIBULA IN POORLY HEALED BIMALLEOLAR FRACTURE

**Aleksandar Pupunovski<sup>1</sup>, Daniela Georgieva<sup>2,3</sup>, Nenad Atanasov<sup>2,3</sup>, Dejan Damjanovikj<sup>2,3</sup>, Igor Atanasovski<sup>2,3</sup>, Miki Gjoreski<sup>2</sup>, Vidanco Nikolovski<sup>4</sup>, Armin Amedovski<sup>1</sup>, Gazmend Elezi<sup>5</sup>, Miki Miloshovski<sup>4</sup>**

<sup>1</sup>Clinical Hospital "Dr. Trifun Panovski", Bitola, Republic of North Macedonia

<sup>2</sup>University Clinic for Orthopedic Surgery, Skopje, Republic of North Macedonia

<sup>3</sup>Faculty of Medicine, Ss. Cyril and Methodius Skopje, Republic of North Macedonia

<sup>4</sup>PHI General Hospital "Borka Taleski", Prilep, Republic of North Macedonia

<sup>5</sup>PHI General Hospital, Kumanovo, Republic of North Macedonia

*Corresponding author e-mail: miki.gjoreski@gmail.com*

### Abstract

Ankle fractures are among the most prevalent lower extremity fractures, with bimalleolar fractures accounting for 60% of cases. Proper classification using the Danis-Weber AO and Lauge-Hansen systems is crucial for guiding treatment decisions. This study presents a surgical approach for the correction of a bimalleolar fracture with fibular deformity, utilizing preoperative X-ray analysis and computer-aided calculations to determine the required osteotomy wedge dimensions. The procedure involved corrective osteotomy, plate fixation, and syndesmotic stabilization to restore anatomical alignment and joint stability. Surgical fixation remains the gold standard for unstable fractures, ensuring optimal functional outcomes. Postoperative rehabilitation plays a vital role in recovery, minimizing complications such as joint stiffness and arthritis. This case highlights the importance of precise preoperative planning, appropriate surgical techniques, and structured rehabilitation for successful management of ankle fractures.

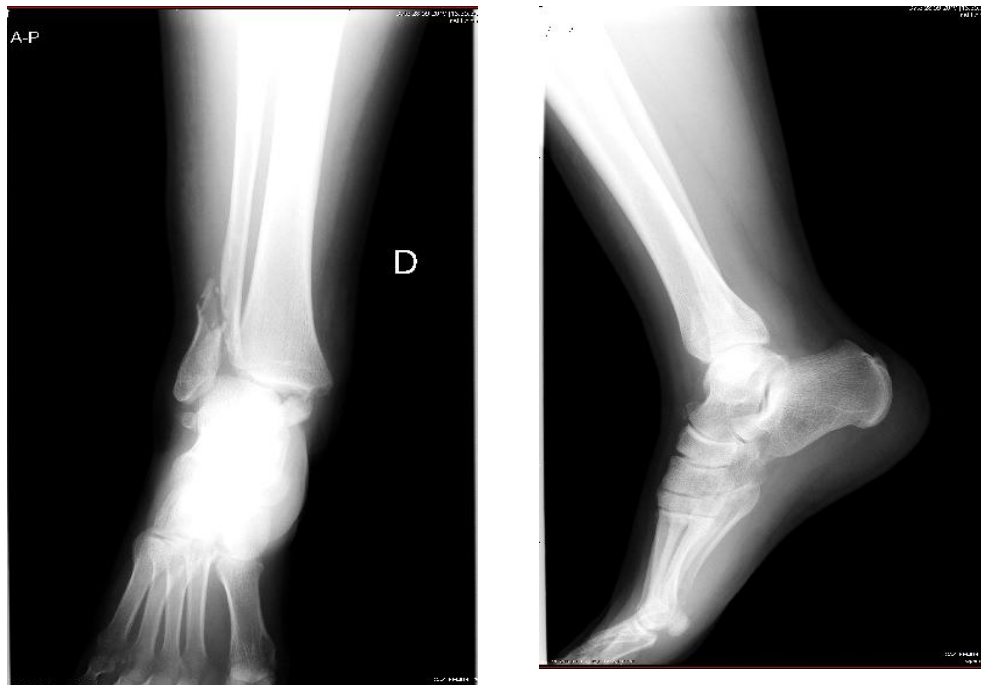
### Introduction

Ankle fractures are among the most common fractures of the lower extremities, comprising 9% of all fractures and representing a significant portion of trauma cases. The two



most commonly used classification systems for ankle fractures include the Danis-Weber AO classification and the Lauge-Hansen classification [1].

Several methods for ankle fracture fixation exist, but the goal of treatment remains stable anatomical repositioning of the talus and correction of the fibula length, as lateral displacement of the talus in the ankle joint area reduces the contact surface by 42%, and displacement (or shortening) of the fibula by more than 2 mm will significantly increase the contact pressure in the joint [2]. Bimalleolar fractures are a type of ankle fracture involving the lateral and medial malleoli at the distal ends of the fibula and tibia, respectively. These two bones articulate with the talus to form the tibio-talar joint. Bimalleolar fractures account for 60% of all ankle fractures, with an incidence of 187 fractures per 100,000 people. Surgical treatment is the primary approach for bimalleolar fractures, as it involves an unstable fracture [3].



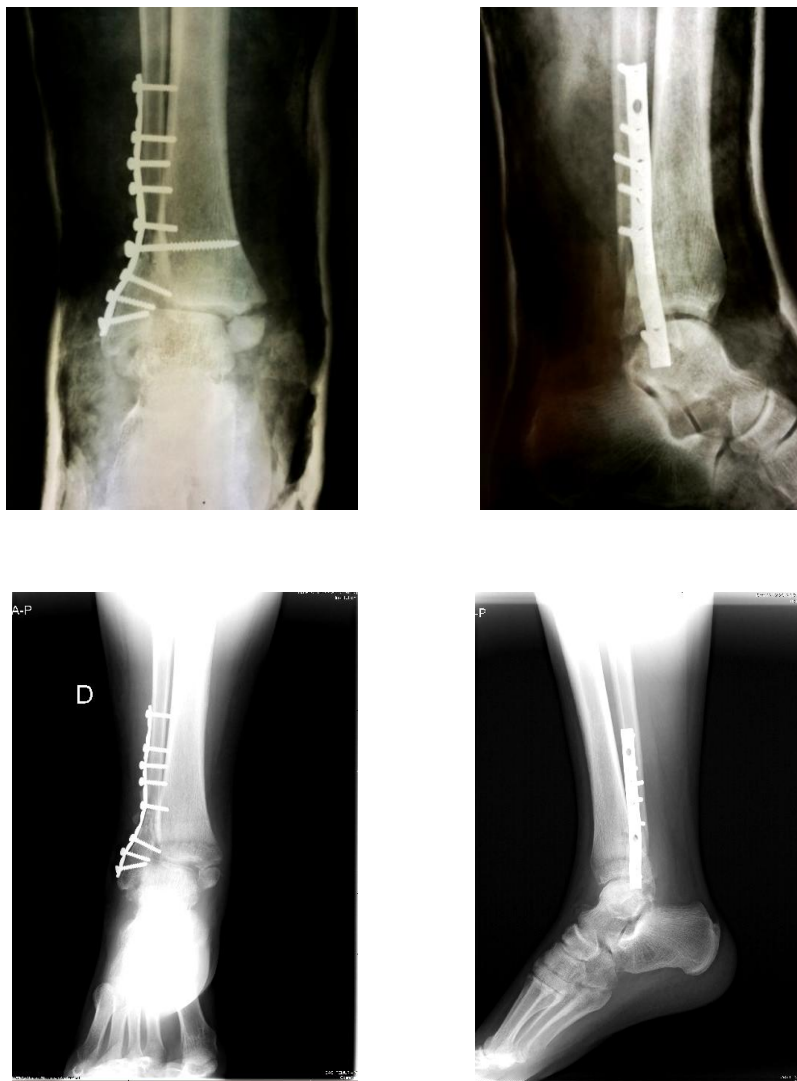
**Figure 1.** Initial X-ray



MIT UNIVERSITY  
SKOPJE

### Case

A 40-year-old patient injured their right ankle after a fall from the stairs, resulting in an open bimalleolar fracture. Routine clinical and diagnostic investigations were conducted (Figure 1), and indication for surgical treatment was established. The patient denied any relevant medical history.



**Figure 2.** Postoperative X-ray





to the right ankle, tripping and loading the right leg with their full body weight. A corrective osteotomy was indicated (figure 2).

### **Treatment Planning**

A corrective wedge with a medial base must be removed, and the entire ankle joint should be pushed medially. Correction of the fibula axis by 19.8 degrees is required. The diameter of the fibula at the osteotomy site is 15.4 mm. The height of the bone wedge with a medial base is 4 mm. Using the Ivan Djorik method, the preoperative calculation of the angle required for correction was made from the X-ray. Intraoperatively, the diameter of the cut fibula is measured. The height of the corrective bone wedge is shown in the table.

With computer processing of the preoperative X-ray, the angle of the fibula axis deformity and the fibula diameter at the osteotomy site are determined (Figure 3). The height of the wedge base is given in the corrective osteotomy table. A corrective osteotomy was performed on the fibula with the wedge base on the medial side. The old 2/3 plate was not removed. After correction, a new, shorter 2/3 plate was placed over the distal part of the old 2/3 plate. The shorter 2/3 plate was placed over the distal half of the old plate to increase its rigidity. A new fibulo-tibial screw was placed, passing through both 2/3 plates to maintain the corrected position of the ankle joint. A reduction and fixation of the medial malleolus were also performed using two Kirschner wires and a malleolar screw.

### **Discussion**

Ankle fractures are one of the most common musculoskeletal injuries encountered in clinical practice. They often occur due to traumatic events such as falls, sports injuries, or motor vehicle accidents. The management of ankle fractures is crucial in minimizing complications such as chronic pain, instability, and arthritis, and in restoring function to the affected extremity [1].

In the presented case, the patient sustained an ankle fracture from a high-energy trauma, a common injury mechanism observed in similar cases. The classification of ankle fractures according to the Lauge-Hansen and<sup>3</sup>Danis-Weber systems plays a key role in guiding treatment.



These classifications, which take into account the direction of force and the level of fibular fracture, help predict fracture stability and guide decision-making regarding conservative versus surgical treatment. In our case, the fracture was classified as Danis-Weber type B, indicating a fracture at the level of the syndesmosis. This type is often associated with medial malleolar and syndesmotic injuries, which can complicate the healing process and increase the risk of long-term disability if not managed appropriately. The decision for surgical stabilization of the fracture was based on the instability of the injury and involvement of the syndesmosis, which required internal fixation to ensure proper alignment and anatomical repositioning. The treatment of ankle fractures has evolved over time.

Historically, many fractures were treated conservatively with cast immobilization. However, recent studies and evidence suggest that surgical intervention, particularly in cases of unstable fractures, is associated with better outcomes in terms of functional recovery and reduced complication rates. Surgical fixation with osteosynthetic material remains the gold standard for managing unstable fractures, as it provides anatomical repositioning and facilitates early mobilization, which is crucial in preventing joint contracture and muscle atrophy [4]. Postoperative rehabilitation is another critical aspect of managing ankle fractures. Early mobilization, partial weight-bearing, and physical therapy are essential for restoring range of motion and strength to the joint. In this case, the patient underwent a structured rehabilitation program, which included gradual weight-bearing exercises and range-of-motion activities [5]. Follow-up visits allowed monitoring of healing progress and adjustments to the rehabilitation program as needed.

### **Conclusion**

Complications in the management of ankle fractures may include infection, nonunion, and post-traumatic arthritis. The presence of an open fracture, as seen in some severe cases, may increase the risk of infection. In this case, no signs of infection were present postoperatively, and healing progressed well. However, long-term follow-up is crucial for monitoring any signs of post-traumatic arthritis, which may develop in patients with a history of joint surface fractures. In conclusion, ankle fractures require a comprehensive approach to diagnosis and management,



MIT UNIVERSITY  
SKOPJE

combining clinical examination, radio-diagnostic imaging, and appropriate classification to determine the most suitable treatment plan. Surgical intervention in cases of unstable fractures, followed by structured rehabilitation, is essential for optimizing functional recovery. Continuous postoperative monitoring ensures early detection of complications and supports the achievement of the best possible outcome.

### **References**

- [1] Briet JP, Hietbrink F, Smeeing DP, Dijkgraaf MGW, Verleisdonk EJ, Houwert RM. Ankle Fracture Classification: An Innovative System for Describing Ankle Fractures. *J Foot Ankle Surg.* 2019 May;58(3):492-496. doi: 10.1053/j.jfas.2018.09.028. Epub 2019 Feb 20. PMID: 30795890.
- [2] Patel S, Dionisopoulos SB. Current Concepts in Ankle Fracture Management. *Clin Podiatr Med Surg.* 2024 Jul;41(3):519-534. doi: 10.1016/j.cpm.2024.01.008. Epub 2024 Feb 20. PMID: 38789168.
- [3] Barber HF, Randall ZD, Strok MJ, Goldfarb JH, Yaeger L, Berkes MB. Functional outcomes after ankle fracture-dislocation: a systematic review. *Arch Orthop Trauma Surg.* 2025 Jan 11;145(1):117. doi: 10.1007/s00402-024-05643-5. PMID: 39797975.
- [4] Mittal R, Harris IA, Adie S, Naylor JM; CROSSBAT Study Group. Surgery for Type B Ankle Fracture Treatment: a Combined Randomised and Observational Study (CROSSBAT). *BMJ Open.* 2017 Mar 27;7(3):e013298. doi: 10.1136/bmjopen-2016-013298. PMID: 28348185; PMCID: PMC5372107.
- [5] Lin CW, Donkers NA, Refshauge KM, Beckenkamp PR, Khera K, Moseley AM. Rehabilitation for ankle fractures in adults. *Cochrane Database Syst Rev.* 2012 Nov 14;11:CD005595. doi: 10.1002/14651858.CD005595.pub3. Update in: *Cochrane Database Syst Rev.* 2024 Sep 23;9:CD005595. doi: 10.1002/14651858.CD005595.pub4. PMID: 23152232.