

Venous pathology targeted surgical management in Hirayama disease: A comprehensive case series of nine cases exploring this potential etiology

ABSTRACT

Objective: Hirayama disease is a rare cause of cervical myelopathy predominantly affecting young individuals. The disease is classically characterized by muscle atrophy in the distal upper limbs. While various etiopathogenesis such as dural sac dysplasia, nerve root dysplasia, structural abnormalities of the spinal ligament, and venous dysplasia have been proposed, this study explores the potential role of venous pathology and surgical management on the basis of it.

Methodology: This is a prospective descriptive case series of nine cases. The diagnosis was made based on the Huashan diagnostic criteria which includes clinical manifestation, imaging, and electrophysiology. In cases where magnetic resonance imaging (MRI) failed to demonstrate engorged veins, a computed tomography (CT) venogram of the cervical spine was used as an imaging tool. All patients underwent cervical laminectomy and coagulation of the posterior epidural venous plexus with or without laminoplasty. All the patients were followed up regularly; clinical improvement and neck disability index were assessed.

Results: All nine patients were male and exhibited classical clinical features, electrophysiological abnormalities, and MRI findings except, in one patient where a CT venogram helped in establishing the diagnosis as the MRI was inconclusive. Postoperatively, all patients had neurological improvement and stabilization of the disease. All patients who underwent CT venogram and cervical spine X-ray in neutral and dynamic position demonstrated no recurrence of engorged venous plexus or significant instability except one patient developing kyphosis. One patient experiencing symptoms in the other limb underwent a second surgery.

Conclusion: This comprehensive case series strongly supports venous pathology as a potential etiology of Hirayama disease. Surgical management with laminectomy and venous coagulation with or without expansile laminoplasty has delivered consistent improvement in neurological outcomes and long-term disease stabilization without the restriction of movements and lesser complications. However, further research is warranted to elucidate the mechanism underlying cervical venous dilatation.

Keywords: Cervical myelopathy, cervical venous plexus engorgement, coagulation of venous plexus, Hirayama disease, laminectomy, venous pathology

INTRODUCTION

Hirayama disease was described in 1959 by a Japanese neurologist and is a well-known cause of lower cervical myelopathy in Asian countries.^[1] Hirayama disease is a very rare disease, and in a Japanese survey, the prevalence was estimated at 1/30,000 people.^[2] Several cases or small series of patients have been reported from various countries and regions, including India, North America, Europe, and Australia.^[3-6] Various etiopathogenesis have been proposed

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those controversies and re evaluates many of the accepted dogmas In Scandinavia in this field there has been a long tradition of emphasis on a thorough understanding of basic scientific principles and their applications to management In this volume phlebologists present their findings in a practical and readable style Annotation copyrighted by Book News Inc Portland OR

Contemporary Management of Acute and Chronic Venous Disease Juan Carlos Jimenez, Samuel Eric

Wilson, 2024-06-03 With a focus on evidence based contemporary and clinically relevant information this practical new resource provides a concise clinical and techniques focused guide to the medical endovenous and surgical management of patients with acute and chronic venous disease Internationally recognized chapter authors cover the general principles of the pathophysiology diagnosis indications and decision making around the management of acute and chronic venous disease The text emphasizes endovenous and surgical techniques where applicable and also addresses symptomatic peripheral venous insufficiency deep venous thrombosis and the care of patients with symptomatic central venous disease Vascular surgeons will find this a valuable guide providing insights into key techniques and approaches to the treatment of acute and chronic venous disorders This book is an invaluable resource for vascular trainees preparing for examinations and for physicians in other specialties looking to expand their knowledge base *Surgical Reconstruction of the Diabetic Foot and Ankle* Thomas

Zgonis, 2012-01-02 Featuring more than 1 200 illustrations including over 800 in full color this book presents a stepwise approach to the surgical management of the most challenging cases in diabetic limb salvage The book covers acute and chronic diabetic foot and ankle wounds and guides surgical decision making in different case scenarios including prophylactic elective trauma and revisional surgery Emphasis is on the multidisciplinary team approach Topics covered include surgical reconstruction of the acute and chronic Charcot foot and ankle local random muscle and pedicle flaps for soft tissue coverage of the diabetic foot equinus deformity and the diabetic foot surgical management of malunions and nonunions and autogeneus bone grafting and orthobiologics Venous Disorders Melina R. Kibbe, William H. Pearce, James S. T. Yao, 2010 Venous Disorders is s a compilation of presentations on topics relating to venous topics from the last five symposia sponsored by the Division of Vascular Surgery at the Feinberg School of Medicine Northwestern University in Chicago Illinois 32 chapters in 9 different sections include general considerations progress in treatment of varicose veins acute deep vein thrombosis venous thromboembolism venous valve repair venous reconstructive surgery endovenous interventional therapy acute subclavian vein thrombosis and chronic venous insufficiency The Modern Trends in Vascular Surgery series brings together the best current strategies for therapeutic and clinical practices These books contain the latest discoveries techniques practice and out comes in vascular surgery There are approximately 25 to 45 chapters in each book classified under the following headings cerebrovascular ischemia infrainguinal lesions aortic aneurysm thoracic aortic pathology aorta and its major branches upper extremity ischemia venous disorders hemodialysis access endovascular technology noninvasive test and issues in vascular surgery Each of the chapters contains valuable illustrations tables and a

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post operative care to prevention and treatment of complications *Leg Ulcers E-Book* Moya Morison,Christine Moffatt,Peter Franks,2006-11-23 The eBook version of this title gives you access to the complete book content electronically Evolve eBooks allows you to quickly search the entire book make notes add highlights and study more efficiently Buying other Evolve eBooks titles makes your learning experience even better all of the eBooks will work together on your electronic bookshelf so that you can search across your entire library of Nursing eBooks Please note that this version is the eBook only and does not include the printed textbook Alternatively you can buy the Text and Evolve eBooks Package which gives you the printed book plus the eBook Please scroll down to our Related Titles section to find this title This comprehensive text adopts a unique problem based learning approach a separate section on case studies helps students link theory to practice It has been written by an international group of 35 contributors and is in full colour throughout The breadth and depth of the material should make this book a core reference text and will appeal to both nurses and medical staff involved in the management of leg ulcers A comprehensive approach incorporates up to date clinical information Problem based learning allows readers to learn through real life situations relevant to their clinical area Reflective case studies encourage readers to explore new ideas and challenge the basis of their practice Sources of knowledge chapter assists readers in identifying up to date sources of information to enhance their professional practice new approach problem based learning international team of contributors full colour throughout fully updated and current much bigger extent more comprehensive Current Techniques in Vascular Surgery James S. T. Yao,William H. Pearce,2001 With approximately 50 contributors this state of the art text discusses new surgical and non surgical treatments of common vascular disorders Unique to this book are topics covering issues in vascular imaging management of aortic aneurysm lower extremity arterial ischemia and more Based on the most popular course in vascular surgery *Vascular Surgery* Alan Dardik,2016-10-20 Vascular surgery has experienced remarkable growth and diversification in the last decade especially with its embracing the disruptive endovascular technological revolution Vascular surgeons remain the only group of specialists capable of total treatment of patients with vascular disease providing medical minimally invasive and surgical therapy Although vascular surgeons practice in all areas of the world practice patterns in different areas naturally have both similarities and differences that reflect both regional patterns of disease genetic characteristics of local peoples cultural preferences for treatment local political and economic situations different access to resources and devices as well as different training paradigms Thus the practice of vascular surgery has diversified and evolved in parallel in many areas converging and diverging in many ways Vascular Surgery A Global Perspective provides the first review and comparison of the diversity of vascular surgery practice around the world The book is grouped according to common vascular diseases such as aneurysmal and occlusive arterial disease as well as venous and lymphatic disease and dialysis access Each major disease topic includes multiple chapters written by expert specialists from around the world each discussing their local approach to the disease and its treatment Similarly the status of

vascular surgery practice is addressed including discussion of the influence of payment systems on practice patient access to the internet for information training paradigms and the legal system including malpractice This textbook provides the first worldwide summary of the care of patients with vascular disease and will be of interest to a wide audience including vascular surgeons vascular medical specialists cardiologists radiologists internists and family practice physicians **Principles of Surgery** Seymour I. Schwartz, 1994 A 6th edition that celebrates the text's 25th anniversary and features nearly 50% new material and a complete reorientation of material to better suit the needs of the general surgeon and internist It also contains all new surgical techniques including the latest in laparoscopy and endoscopy In addition the scientific principles underlying pathophysiology and surgical intervention accompany discussion of surgical diagnosis and management **Surgical Management of Cerebrovascular Disease** Robert Gerdes Ojemann, Robert M. Crowell, 1983 **Drain's PeriAnesthesia Nursing - E-Book** Jan Odom-Forren, 2022-12-27 Selected for Doody's Core Titles 2024 with Essential Purchase designation in Perioperative Trusted for more than 30 years Drain's PeriAnesthesia Nursing A Critical Care Approach 8th Edition provides comprehensive clinical content tailored specifically for perianesthesia nurses An easy to use format with five distinct sections covering the PACU anatomy and physiology pharmacology nursing care and special considerations means you get the equivalent of five books in one Nursing and pharmacologic interventions are integrated with in depth coverage of pathophysiology and updated content includes the latest standards and current issues affecting perianesthesia nursing practice Focusing on research documentation and psychosocial considerations this is the one book that can take you all the way from being a novice nurse in the PACU to preparing for CPAN or CAPA certification Five separate sections provide comprehensive coverage including the PACU anatomy and physiology pharmacology nursing care and special considerations Coverage of current policies and issues affecting perianesthesia nursing practice includes patient safety infection control managed care implications pain management and bioterrorism Comprehensive information on the various types of anesthetic agents familiarizes you with what will be used in the PACU Special Considerations section details the care of patients with conditions such as malignant hyperthermia substance abuse sickle cell anemia and cardiac arrest UPDATED Revised content throughout provides the most up to date information for effective perianesthesia nursing practice NEW Full color layout makes content more visually appealing and highlights important information NEW Information on SARS COVID 19 is now included in the Pathogens chapter NEW Chapter on International Care of the Perianesthesia Patient offers complete coverage on this key topic UPDATED Coverage of pain management for the perianesthesia patient features the latest guidelines UPDATED Patient with Chronic Disorders chapter provides current information on caring for these patients UPDATED Evidence Based Research boxes provide the latest standards of care

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