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HealthNews DIGEST

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On behalf of Aster's leadership, I am delighted to welcome you to the 15th edition of the HealthNews Digest. This initiative, which started several editions ago, has become a crucial platform reflecting our enduring commitment to clinical excellence and knowledge sharing. The dedication and contributions of our esteemed medical professionals have made this newsletter an invaluable resource.

I sincerely thank everyone who has been a part of this journey. Your ongoing support and expertise have been instrumental in making this initiative successful. We are confident that our exceptional teams of Aster doctors, working alongside our external clinical partners, will continue to drive this initiative forward. We are committed to maintaining clinical excellence and providing the best possible patient care through ongoing knowledge-sharing and collaboration.

Dr. Ramanathan V

Medical Director
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As the Medical Director for Aster Hospitals and Clinics, it brings me great joy to witness this initiative, rooted in the fundamental concept of sharing clinical best practices, successfully completing its 15th edition, and continuing to explore new horizons with each subsequent release. I wholeheartedly commend the dedicated efforts of everyone who has tirelessly contributed to making this newsletter an integral part of the Aster ecosystem.

With its diverse blend of compelling cases and thought-provoking articles, this newsletter has consistently provided our community of doctors and allied professionals with innovative ideas for collaborative ventures in clinical best practices. I urge every one of you to maintain the remarkable momentum in the medical science field and further enhance your contributions to the forthcoming editions of HealthNews Digest. Your unwavering commitment to this initiative is instrumental in advancing the frontiers of healthcare knowledge and excellence.

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Pelvic Mass

Operative Illusion: The Adnexal Masquerade and the Multispecialty Tango for a safe outcome at Aster Hospital, Al Qusais

PRESENTATION

- 27 year old female
- P2L3 patient referred from another Clinic to Aster Hospital
- Surgical history of LSCS (Lower Segment Caesarian Section) 3 years back
- Admitted with:
  - Complaints of pain in the abdomen for 5 days
  - Fever and cough for 3 days
  - No complaints of foul-smelling discharge
  - No bowel or bladder complaints

FINDINGS

During Examination:

- Afebrile
- Pulse rate – 90/min
- BP – 110/70 mmHg
- Mild tenderness in the periumbilical region
- No forniceal tenderness
- No cervical motion tenderness

CECT Abdomen showed:

Heterogeneous predominantly hypodense entity in the right iliac fossa region measuring 63 x 53 mm showing mild peripheral enhancement and adjacent fat stranding and internal clumped serpiginous entities closely abutting the adnexa medially and bowel loops laterally - likely possibility of tubo–ovarian infective/inflammatory etiology – salpingitis with evolving pyosalpinx or right adnexal mass.

Non-enhancing liquefied content showing Internal Tubular Configuration mimicking Inflamed Clumped Pyosalpinx

Mass adhering the Ileum and Colon

Mass abutting the Adnexa

DURING PROCEDURE

After obtaining informed consent, the patient underwent Diagnostic Laparoscopy with the working diagnosis of Right Pyosalpinx:

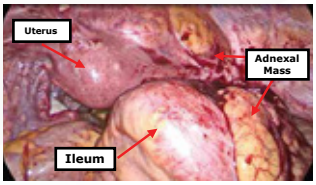
Obstetrics and Gynaecology Management:

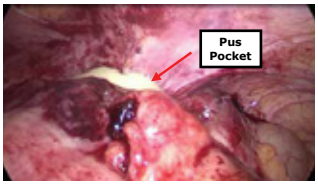
- Patient was placed in a lithotomy position and bladder catheterisation was done.
- Parts were painted and draped.
- 1 supraumbilical and 3 lateral ports were placed, and diagnostic laparoscopy was done - uterus, left fallopian tube and ovaries were found normal.
- The right tube arising from the uterine end and the ovary was found to be normal.
- The fimbrial end was adherent into the mass and the fimbrial end of the tube cecum and terminal ileum couldn't be visualized separately.
- The case was handed over to the General Surgeon.

General Surgery Management:

- Dense adhesions between the ileum, caecum, right fallopian tube, and appendix could not be visualized separately.
- The mass was gently dissected using water dissection.
- Uterus was identified. The right fallopian was traced from the fundus of the uterus in a retrograde manner, identifying the isthmus of the fallopian tube and following it to half of the length of the fallopian tube.
- Gentle dissection started between the ileum and caecum and proceeded towards the fallopian tube.
- Bowel adhesiolysis was done, and a large pocket of abscess was found in the pelvis below the ileum caecum near the fallopian tube.
- Appendix was long, perforated and densely adherent to the ileum. It was removed with difficulty as piecemeal, and the base was ligated with Vicryl as the caecum base was friable due to oedema. The adhesions stump of the appendix was submerged with Vicryl endo-suturing.

- Bowel and peritoneal wash was given after separating the tube from the bowel adhesions, and it was found that the tube was only congested and no evidence of any pyosalpinx was seen.
- Bleeding from the fallopian tube and right ovary were controlled.
- No. 24 drain was placed, and Endobag was used for removal of the appendix and necrotic tissue.
- Abdomen was closed with Port Vicryl, and skin was closed with staplers.

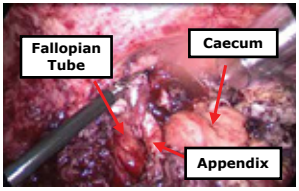


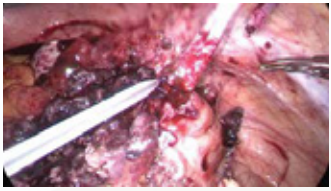


Adhesions with Pelvic Mass covered by Omentum

Pelvic Mass under Dissection

Hydrodissection of Adherent Tissues





Appendix dissected and ligated after Dissection

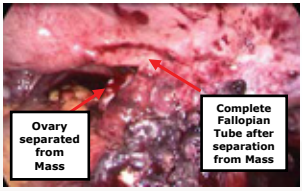


Image after Completion of the Procedure

POST PROCEDURE

The patient tolerated the procedure well without any complications, and the post-operative period was uneventful. The patient was discharged in a stable condition.

DISCUSSION

Timely intervention can help save life, prevent complications, and results in smooth recovery. Multidisciplinary cooperation and approach gives a better outcome. Dense adhesions can be dealt laparoscopically with gentle dissection and patience. Hydro dissection, when used well, shows good outcomes. Sometimes, a direct visualization of the mass can give a different picture than that seen on imaging. So, it is important to be flexible and adaptive to intra-operative surprises.

CONCLUSION

An optical illusion in the form of a gynaecological case concealed an appendix pretending to be an adnexal mass. This challenge was effectively addressed through a coordinated effort involving the gynaecologist, radiologist, and surgeon, showcasing their collective expertise.

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Meniscal Injuries

Comprehensive Management of Meniscal Injuries: A closer look at Conservative and Surgical Approaches

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INTRODUCTION

Meniscal injuries are prevalent knee soft tissue injuries, affecting both young adults and the elderly population with degenerative changes (1,2). Meniscal tears are relatively common, with an estimated incidence of 60 per 100,000 people (1). Diagnosing these tears requires a comprehensive approach involving patient history, physical examinations, arthroscopic procedures, and often magnetic resonance imaging (MRI) (1). While conservative care is frequently employed and is the preferred option for certain individuals, partial meniscectomy remains a frequently conducted surgical intervention (1). In cases of acute traumatic lesions, especially in young patients, meniscal repair is strongly recommended for all tears (1).

In this article, we will provide an overview of meniscal injury management, covering conservative and surgical approaches, as well as ongoing research and potential breakthroughs.

TREATMENT APPROACHES FOR MENISCAL INJURIES

The choice between conservative and surgical approaches is influenced by multiple factors (3). These factors include age, tear complexity, tissue quality, severity of symptoms, etiology (traumatic vs. atraumatic tear), and assessed surgical risk (3).

CONSERVATIVE MANAGEMENT

To manage acutely painful and swollen knees suspected of having a meniscus tear, the initial approach involves adhering to the R.I.C.E. principle (rest, ice, compression, elevation) (4). Pain and swelling relief can also be achieved through oral medications, including acetaminophen and nonsteroidal anti-inflammatory drugs (NSAIDs) (4).

Figure 1: Conservative Approach of Meniscal Injuries (4–7).

For cases involving degenerative tears and uncomplicated traumatic meniscal tears, conservative management entails utilizing a knee brace, modifying physical activity, engaging in physical therapy, and performing exercises to strengthen the quadriceps muscles (4).

The commencement of physical therapy should be prompt, starting with pain-free range of motion exercises and gradually progressing to weight-bearing exercises based on the patient's tolerance (4). Activities like biking and swimming, which reduce mechanical stress on the knee joint, should also be promoted (4). For patients who opt against surgery or those for whom surgery or chronic NSAID usage is not advised, intermittent intra-articular injections of cortisone or hyaluronic acid every two to three months can provide short-term relief (5).

In cases of uncomplicated traumatic or degenerative meniscal tears, conservative care should be continued for four to six weeks (4). Notably, a study indicated that performing quadriceps-strengthening exercises three times a week over a 10-week period led to a 35% enhancement in knee function among osteoarthritis patients (6). Another randomized controlled trial evaluated arthroscopic partial meniscectomy (APM) followed by supervised exercise compared to exercise therapy alone in individuals with degenerative meniscus tears (7). Despite both groups demonstrating significant differences over the course of eight weeks, there were no significant differences in outcomes (7). Hence, it is advisable to prioritize supervised exercise as the initial conservative approach in managing this condition (7).

However, if persistent mechanical symptoms substantially impair the quality of life and daily functioning, surgical intervention should be considered (7).

SURGICAL MANAGEMENT

Surgery is often recommended if the situation entails any of the following:

(1) Red zone tear; (2) complicated and extensive meniscal rips > 1 cm; (3) young, healthy candidates under the age of 40; (4) acute tears that occurred within the past six weeks; and (5) the existence of a concomitant ACL injury (3).

Meniscectomy, meniscal repair, and meniscal reconstruction comprise the current surgical protocol for treating meniscal tears (3).

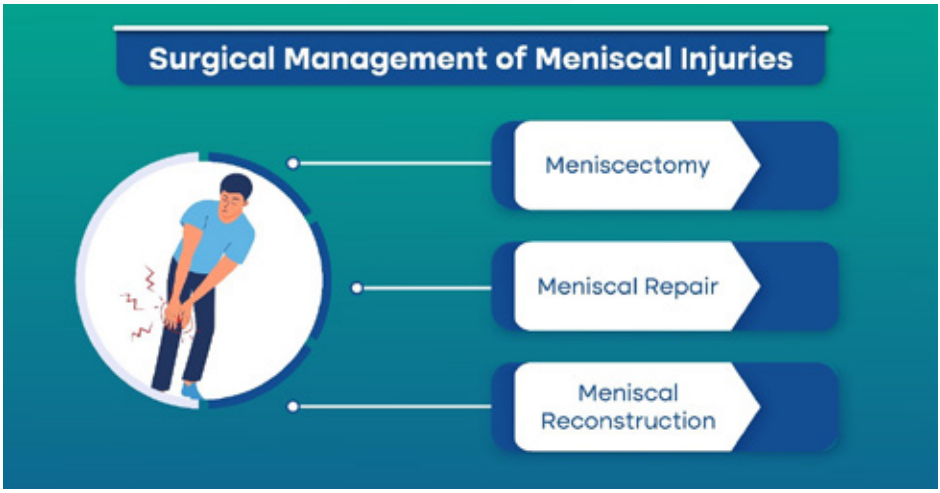

Figure 2: Surgical Approach of Meniscal Injuries (3,5).

MENISCECTOMY

Complete or partial removal of the meniscus, known as meniscectomy or meniscal resection, can be performed through either an open or an arthroscopic technique (3). In the present era, total meniscectomy is almost universally avoided due to established adverse effects, primarily the early onset of osteoarthritis (3). Arthroscopic partial meniscectomy (APM) has become more prevalent as it offers minimally invasive characteristics, shorter recovery periods, and relatively reduced morbidity (3).

APM is indicated for radial white-white zone meniscus tears (non-perfused tears) and degenerative meniscus injuries that do not respond to conservative management (5). However, it is important to note that even with APM, the risk of eventual osteoarthritis remains (5). Comprehensive clinical research has demonstrated limited long-term advantages of APM over non-surgical approaches for both traumatic and atraumatic meniscus tears (5). Factors linked to unfavorable APM outcomes encompass obesity, female gender, and advanced osteoarthritis (5).

MENISCAL REPAIR

Meniscal repair, similar to meniscectomy, can be performed using either open surgical methods or through an arthroscopic approach (5). Due to a lesser risk of neurological injury, arthroscopic repair is more common than open surgery (5). The tear patterns are carefully evaluated for vascularity before beginning meniscal repair (5). Repair is particularly beneficial in cases of acute traumatic meniscal rips in the peripheral, well-perfused red-red zones of the meniscus (5). Arthroscopic meniscus repair can be performed using inside-out, outside-in, or all-inside procedures (3). The inside-out strategy is the best strategy since it has the highest success rates and is regarded as the gold standard in meniscal repair (3).

The inside-out method involves passing sutures from inside the knee to an extra-capsular area through an extra-articular incision (3). It is commonly used for posterior horn meniscal injuries (3). The outside-in technique is more typical for anterior horn tears, where a spinal needle passes through the tear from outside to inside, and the suture is pulled through an arthroscopic portal (3). The all-inside technique is beneficial for extreme posterior meniscal tears (5).

MENISCAL RECONSTRUCTION

Meniscus reconstruction surgery aims to replace missing or removed parts of the original meniscus with functional substitutes (3). Its goal is to restore knee joint functionality and prevent degeneration due to compromised biomechanics (3). This can be achieved through meniscal scaffolds or meniscal allograft transplantation (MAT) (3). MAT involves transplanting preserved meniscus allografts, while meniscal scaffold surgery uses synthetic porous structures to fill defects, enabling vascular tissue growth for added reinforcement (3).

TISSUE ENGINEERING

Tissue engineering (TE) is an emerging approach for treating meniscal tears (8). It focuses on regenerating the meniscus by stimulating cell differentiation to replicate native features (8). TE can repair tears and even regenerate partial or complete menisci post-meniscectomy (8). Key cell types for meniscal TE are meniscal cells, articular cells, and mesenchymal stem cells (MSCs) such as embryonic, bone marrow, and synovium-derived MSCs (8). These cells proliferate and differentiate into cartilage-like cells, depositing native meniscus-like extracellular matrix (ECM) (8). MSCs show promise due to their similarity to human meniscus tissue, multilineage potential, self-renewal, and secretion of reparative factors (8).

Growth factors like transforming growth factor (TGF-β), HGF (Hepatocyte growth factor), Insulin-like growth factor-1 (IGF-1), fibroblast growth factor 2 (FGF-2), and platelet-derived growth factor (PDGF) are employed to enhance proliferation, differentiation, ECM deposition, and vascularization (8). MSCs and growth factors are administered through intra-articular injections or seeded onto scaffolds (8). Injections offer advantages like low morbidity and repeatability (8). Ideal scaffold characteristics include instructive properties, architectural mimicry of the meniscus, mechanical resilience, biocompatibility, and ease of implantation (8). A hybrid approach

combining the biocompatibility of allogeneic scaffolds with the mechanical strength of synthetic ones is suggested for sustainability (8).

FUTURE PERSPECTIVES AND CONCLUSION

Decades ago, menisci were mistakenly considered functionless and often subject to removal (1). However, a paradigm shift in orthopedic understanding recognized their pivotal role in knee biomechanics, redirecting focus from removal to preservation (1). Presently, meniscus tears, stemming from trauma or osteoarthritis, are prevalent among individuals of all age groups (1). Ongoing research and clinical progress are pivotal in enhancing diagnosis and management (1). A comprehensive assessment, including patient history, physical examination, and tear specifics, augments our understanding of the underlying pathogenesis (1).

The knee joint's vascular supply substantially influences proper tissue healing (1). Accurate lesion localization informs optimal treatment and rehabilitation (1). While conservative methods contribute to functional improvement, surgery remains the primary intervention for meniscal tears (1). Arthroscopic meniscal repair has gained prominence, yet its short-term success contrasts with a consistent 30% long-term failure rate (5).

The area of cell-based tissue engineering aims to regenerate menisci by stimulating cellular responses (8). However, empirical research is essential to evaluate the efficacy of these approaches in both short and long-term scenarios (1). The continuous evolution of imaging and technology plays a pivotal role in refining diagnostic and treatment modalities over time (1).

Key Highlights

- Meniscal injuries are among the most commonly encountered knee soft tissue injuries, often observed among both young adults and the elderly population with degenerative changes (1,2).
- While conservative care is frequently used and may be the sole choice for some individuals, partial meniscectomy remains the most commonly performed surgery (3).
- Tissue engineering is a prominent topic in contemporary research, holding the potential for significant therapeutic outcomes (8).

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Myasthenia Gravis (MG)

An unusual presentation of Myasthenia Gravis (MG) treated effectively at Aster Clinic, Al Qusais, Dubai

BACKGROUND HISTORY

- 38-year-old Asian female / left-handed / born of non-consanguineous marriage
- Medical history of:
  - Neck pain for 4-5 years progressing gradually and radiating to both the upper limbs
  - Lower back pain for 3-4 years progressing gradually and radiating to both the lower limbs
  - Strain in carrying out daily basic activities
  - Drooping of both eyelids over the last 6 months but showed no diurnal variations
  - Asymmetric involvement of limbs and mildly fluctuating limb weakness
- No family history of medical illness

ASSESSMENT

- Haemodynamically stable with no rash or lymph node enlargement

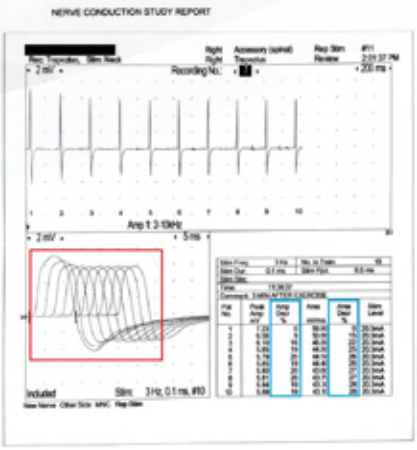
Initially evaluated by Physician and later referred to Neurologist for a detailed neurological assessment.

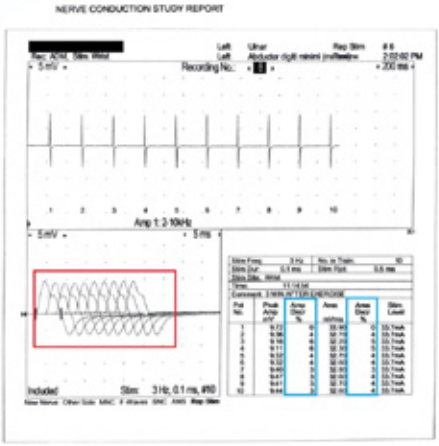
During Neurological Examination:

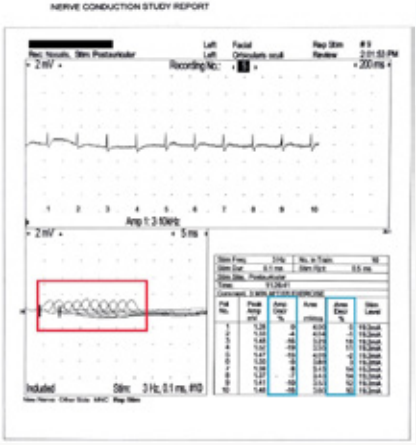
- Fatiguable weakness in both the arms and asymmetric in distribution (left more than right).
- Normal cognition and coordination, sensory system examination, deep tendon reflexes and bilateral plantar flexor.
- Possibility of neuromuscular junction disorder was considered, given the fatiguable muscle weakness and fluctuating tendency of limb weakness.

WORKUP

- Preliminary blood investigations, along with an x-ray of the cervical and lumbar spine, were done to rule out inflammatory causes and spondylosis, all of which were normal.
- Started on symptomatic treatment, including anti-inflammatory medications and multivitamins.
- In view of her worsening symptoms, a secondary workup of serum ANA profile, RA factor, serum uric acid, and serum TSH was done which were negative.
- Acetylcholine Receptor (AChR) antibody test was positive (8 nmol/l), and the Nerve Conduction Velocity (NCV) test with Repetitive Nerve Stimulation showed positive decremental response suggestive of neuromuscular junction disorder.







The electrophysiological study showed an abnormal 3 Hz repetitive nerve stimulation study, and a positive decremental response, suggestive of Neuromuscular Junction Disorder

Based on the clinical features and investigations, Myasthenia Gravis was diagnosed.

- She was started on Tablet Pyridostigmine 60 mg/day, to which she showed clinical response in the form of improved muscle strength and quality of life.
- Medication dose was gradually titrated as per tolerability until a maintenance dose was achieved.

CONCLUSION

While fluctuation of symptoms is considered a hallmark of MG, there are cases in which this phenomenon is either subtle or absent, possibly delaying the diagnosis. Given the paucity of literature regarding characteristics of patients with MG presenting without or mildly fluctuating symptoms, this is an avenue worth investigating to characterise this population better and expedite diagnosis and treatment.

Key Summary Points:

- Symptom fluctuation is a hallmark of Myasthenia Gravis.
- Absence of fluctuation can further delay diagnosis and treatment.
- Low-fluctuating MG can be an underestimated phenotype of this disease.
- Patients with chronic fatiguability can benefit from screening for MG.

DISCUSSION

Myasthenia Gravis (MG) is a relatively rare acquired, autoimmune disorder caused by an antibody-mediated blockade of neuromuscular transmission resulting in skeletal muscle weakness and rapid muscle fatigue. Fluctuating and symmetric weakness are common characteristics of this disorder.

Myasthenia Gravis (MG) is an uncommon autoimmune disease mediated by antibodies that attack the postsynaptic acetylcholine receptors (AChRs) at the neuromuscular junction (NMJ), causing fluctuating muscle weakness aggravated with use and relieved with rest. Its two primary forms are: Ocular, which is restricted to the eyelids and extraocular muscles and may be asymmetrical, and Generalised form, which additionally involves the bulbar, respiratory muscles, and limbs in varying degrees but maintains the symmetry of the affected site (1). The incidence is higher in women than men under 50 years of age (7:3), and in those over 50 years, men have more risk (3:2) (2). In this report, we describe a patient who presented with neck and lower back pain involving the limbs but with an exuberant asymmetry between the body sides, predominant in the left. The history and examination allowed the diagnostic confirmation of MG and adequate therapeutic management.

MG may present as ocular MG in about two-thirds of patients and is restricted to ocular and extraocular musculature or generalized, affecting other muscle groups.

MG's cardinal feature is a fatiguable fluctuating weakness, worsening with repetitive activities and improving with rest (3). Ocular muscle weakness is by far the most common initial symptom of MG, occurring in approximately 85% of patients. Generalized progression will develop in 50% of these patients in two years (4).

We report an uncommon presentation of MG, an autoimmune disease associated with impairment of neuromuscular transmission, due to an immune-mediated reaction against postsynaptic membrane proteins of the NMJ. Clinically, the diagnosis of MG is based on clinical history, physical examination, serologic examination, and electrophysiologic studies (study of repetitive nerve stimuli +/- single fibre electroneuromyography). The serologic test determining of the serum level of the anti-AChR and, significantly, when negative, of the antibody against the muscle-specific receptor tyrosine kinase (anti-MusK) is a key element. The MG treatment includes acetylcholinesterase inhibitors (i.e., pyridostigmine), immunomodulators such as glucocorticoids and immunosuppressants (i.e., azathioprine, mycophenolate mofetil, and cyclosporine), rapid immunomodulation (i.e., plasmapheresis and intravenous immunoglobulin), and thymectomy in selected cases (5). Our patient fulfilled all diagnostic criteria: clinical (worsening of symptoms throughout the day, in the presence of inflammatory intercurrences, and with significant improvement with acetylcholinesterase inhibitors), laboratory (presence of high levels of anti-AchR), and Electroneuromyography (ENMG) (decreased amplitude by more than 10% in electroneuromyography with repetitive stimuli). However, the markedly asymmetric limb weakness with less fluctuation of muscle weakness and the later involvement of ocular muscles was an unusual and unexpected presentation, especially considering the pathophysiology of the disease.

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Tips to protect yourself and your family from flu

GET FLU VACCINE
IF YOU ARE HIGH RISK

WASH/SANITIZE
YOUR HANDS

AVOID TOUCHING
EYE, NOSE & MOUTH

COVER NOSE & MOUTH
PROPERLY WHILE SNEEZING

HAVE A
HEALTHY DIET

HAVE WARM LIQUIDS
& VITAMIN C

Your perfect companion this winter season

HIGH QUALITY

SAFE &
EFFECTIVE

FAST RELIEF

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Cardiovascular Risk Factors

Understanding Cardiovascular Risk Factors in Women

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CARDIOVASCULAR RISK FACTORS

Although men and women share some common risk factors for CVDs, the significance and impact of these factors differ between genders (1).

In women, the risk of cardiovascular diseases (CVDs) is often underestimated due to an incorrect consideration that women are more protected than men against CVDs (1). Despite the fact that women have a lower incidence of CVD than men, several clinical studies have shown that after suffering an acute cardiovascular event, women have a higher mortality rate and a worse prognosis (1).

This article discusses some common risk factors that predispose women to cardiovascular diseases.

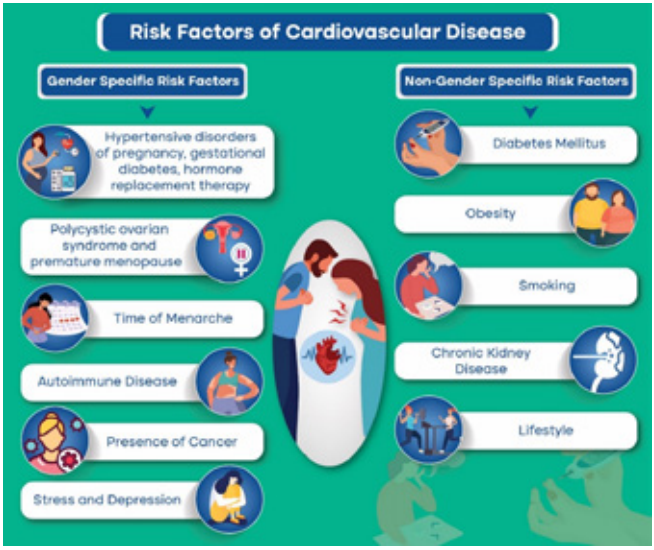


Figure 1: Identifiable Risk Factors of Cardiovascular Diseases (1-18).

PREGNANCY RELATED COMPLICATIONS AS A RISK FACTOR FOR CV DISEASE:

Pregnancy presents a significant challenge to the cardiovascular system, and complications associated with pregnancy often arise from the mother's inability to adapt to the vascular and metabolic demands (1). Preeclampsia and the early onset of CVD in a woman's life can develop as a result of the mechanisms shared by vascular disease and hypertensive disorders during pregnancy (2). Approximately 3-5% of all pregnancies are diagnosed with gestational diabetes mellitus (GDM), which is linked to an increased risk of CVD (1). These short-lived metabolic and vascular changes in pregnancy may lead to long-term effect on the cardiovascular system (1).

- **HYPERTENSIVE DISORDERS OF PREGNANCY:**

  Hypertensive pregnancy disorders, such as pregnancy-induced hypertension (PIH) and preeclampsia, occur in approximately 2 to 10% of women (1). These conditions are strongly linked to an increased risk of CVD in the future for the affected mothers (1). Preeclampsia was linked to a 2.1-fold higher risk of coronary heart disease (CHD) after a follow-up of 14 years compared to women who had a normotensive pregnancy, according to a recent meta-analysis involving 3.5 million women (1).

- **GESTATIONAL DIABETES:**

  Around 3-5% of pregnancies are affected by GDM, which is correlated with a higher risk of CVD in later life (1). This risk is mainly driven by the development of type 2 diabetes (T2DM) (1). A recent analysis combining multiple studies estimated that women with gestational diabetes have a 7.4 times higher risk of developing T2DM in their lifetime compared to those without gestational diabetes (1).

- **PRETERM DELIVERY:**

  Preterm delivery/birth is a major complication of pregnancy that predisposes the mother to the risk of CVD and morbidity compared to women with at term birth and moderately preterm birth (3). The risk of developing CVD was 1.78 [1.61–1.96] HR [95% CI] in preterm birth, which increased with different stages of preterm birth, the risk was greater for extreme preterm birth (AHR = 1.98 [1.63–2.42]) and moderate preterm birth (AHR = 2.06 [1.69–2.51]) than late preterm birth (AHR = 1.63 [1.44–1.85]) (3).

POLYCYSTIC OVARY SYNDROME:

Polycystic ovary syndrome (PCOS) affects a significant number of women and is characterized by irregular menstrual cycles, excess androgen levels and the presence of polycystic ovaries (2). PCOS is associated with various cardiometabolic complications (2). Obesity, abnormal lipid profiles (higher LDL-C and triglycerides, lower HDL-C), hypertension, insulin resistance, and deficiencies in insulin secretion are more common in women with PCOS (2). Women with PCOS also experience an increased risk of developing type 2 diabetes and hypertension,

independent of body mass index (BMI) (2). Inflammatory and thrombotic markers are also elevated in women with PCOS (2). These findings emphasize the importance of addressing the cardiometabolic risks associated with PCOS in clinical management.

EARLY AND LATE MENARCHE:

Menarche is an important reproductive stage accompanied by neurohormonal changes (4). Both early (<12 years of age) and late menarche (>15 years of age) are associated with an increased risk of coronary artery disease (4).

EARLY MENOPAUSE:

Natural menopause occurs between the ages of 49 and 52 and varies amongst different ethnicities (5). Women with early and premature menopause (<45 years of age) were at a higher risk of developing a cardiovascular event compared to women following menopause after age of 51 years (p<0·0001 for trend) (5). Estrogens are vasodilators that modulate vascular activity of angiotensin, serotonin-mediated vasodilation, and endothelin-1 (6). A deficiency of estrogen hormones causes endothelial dysfunction, free radical production, and altered anatomy, reduced estrogen receptors all hinder the vasodilatory effect of estrogen (6).

AUTOIMMUNE DISEASE:

Systemic lupus erythematosus (SLE) is a multi-organ affecting autoimmune disease that has a high incidence of female: male ratio of 13:1 (7). SLE presents with the risk of peripheral artery disease, coronary artery disease, and impaired immunological response, vascular repair and can contribute to cardiovascular risks (7). It increases the risk of CVD in women by 50 times (7).

Rheumatoid arthritis (RA) is another autoimmune condition mediated by autoantibodies affecting the synovium as well as other organs (8). The inflammatory course of the disease causes arterial stiffness, impairs lipid metabolism, provokes atherosclerotic plaque rupture, and causes myocardial infarction (8). Controlling the inflammatory activity of RA has shown to improve cardiovascular outcomes (8).

Antiphospholipid syndrome (APLS) is another autoimmune condition presenting with antiphospholipid antibodies (APAB) (8). The APAB antibodies mediate platelet activation, neutrophil activation, pro-inflammatory cytokines, macrophage differentiation and thrombo-inflammatory changes (8). Thromboembolism of the veins, arteries and obstetrics causes macro- and microvasculature complications leading to MI, stroke, and other cardiovascular complications (9).

BREAST CANCER:

There are several overlapping risk factors between cancer and CVD, and patients may experience CV events secondary to cancer or exacerbation due to the disease course (10).

A study has reported that the risk of death due to CVD in women with breast cancer was 9.4% (133/1413) compared to 7.4% (105/1411) in non-cancer patients (11). The risk of developing CVD related mortality was twice after 7 years of breast cancer disease [sHR: 1.9 (1.4, 2.7)] (12).

In addition, cancer drugs can raise the risk of CVD compared to non-cancer patients (13). The chemotherapy related effects can be mitigated by early cardioprotective therapy and early treatment initiation (13).

HORMONAL REPLACEMENT THERAPY:

Estrogen is a commonly prescribed drug in postmenopausal women (14). Estrogen use has reported a 40-50% decrease in reduction in coronary heart disease (14). It shows cardioprotective effect, relieves vasomotor symptoms and prevents chronic diseases (14). The protective action of estrogen is due to its LDL reducing action and raising HDL (14). Beneficial CVD outcomes are observed when HRT treatment is started in women <60 years of age or in less than 10 years from the onset of menopause (2).

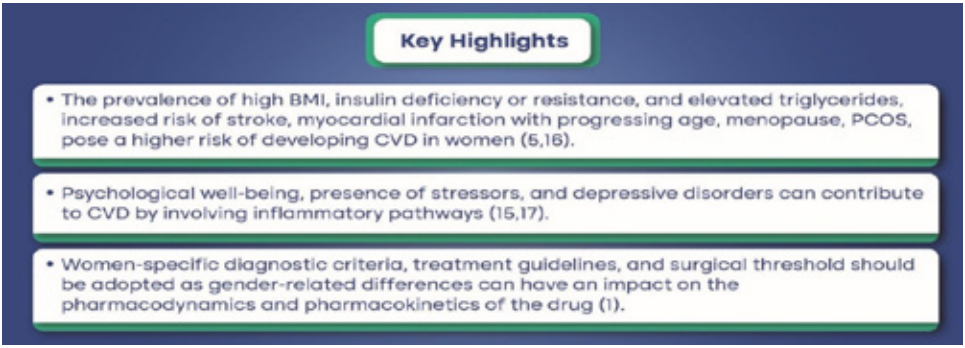
UNDERASSESSED RISK FACTORS:

STRESS:

In addition to physiological changes, women also experience psychological stressors that can affect cardiovascular health (15). Stress can lead to activation of the autonomic nervous system, and hypothalamic-pituitary axis that in turn triggers inflammation (15). Stress can subject patients to unhealthy smoking and drinking habits that further raise CV risk (15). The body responds to acute stress by cardiovascular adaptive responses which include: increased heart rate, cardiac output, increased BP, but prolonged activation of these mechanisms and persistent chronic stress may not return to their original states after the stressors are removed (16).

DEPRESSION:

Older women have twice the risk of suffering from depression owing to the hormonal changes throughout the lifetime (17). Patients with CVD are also known to suffer from depressive disorder (DD) and patients with DD are more prone to suffer from stroke, MI and heart failure (17). Patients facing a cardiovascular event after diagnosis of depression face a two-fold risk of death (17). A multicenter study demonstrated that majority of the depressive symptoms had a significant risk of CVD (18). The incidence of cardiovascular events was 1.40 (95% C.I.: 0.89–2.20) in moderate depression, and 2.12 (95% C.I.: 1.30–3.48) in severe depression (18).



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Diverticulitis with Colovesical Fistula

Diverticulitis of Large Intestine with Colovesical Fistula treated effectively at Aster Hospital, Al Qusais

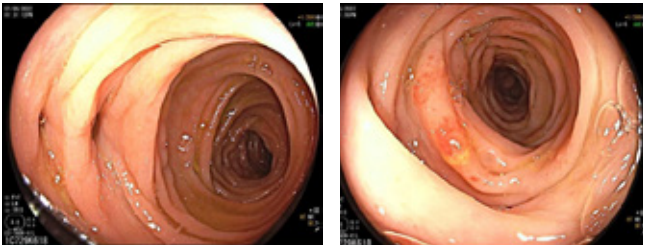
PRESENTATION

- 36 year old female
- Medical history of Sigmoid Diverticulitis with perforation peritonitis treated conservatively
- Presents with pneumaturia and recurrent UTI – diagnosed as Colovesical Fistula
- No family history of medical illness
- Admitted with:
  - Complaints of pain in the lower abdomen and perianal region, dysuria, and fever from the last 2 days

FINDINGS

During Examination:

- Afebrile
- No Pallor, Icterus, Cyanosis, Clubbing, Lymphadenopathy, Oedema
- Equal air entry, no added sounds or murmur
- Tenderness in the lower abdomen
- No rigidity and local swelling

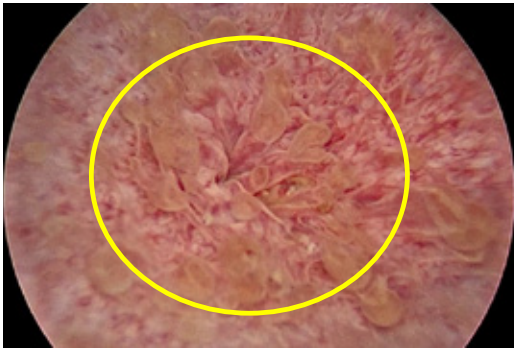


Colonoscopy Finding – Sigmoid Colon Diverticuli with Erythematous and Edematous Mucosa

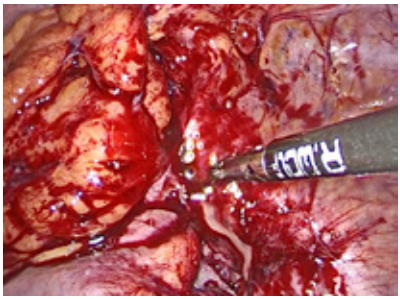
DURING PROCEDURE

After obtaining informed consent, the patient underwent Sigmoid Colectomy with Bladder Repair and Bilateral DJ stenting.

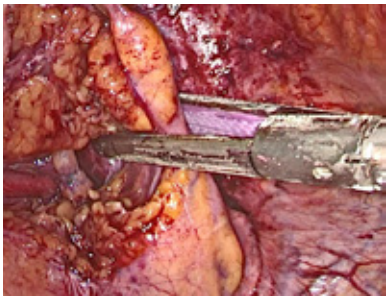
- Cystoscopy was done with a 20 Fr 30-degree scope.
- Bilateral DJ stent of 26 cm 5 Fr was placed under fluoroscopic guidance.
- The pneumoperitoneum was created using the open method at the supraumbilical port.
- Two 10 mm and two 5 mm ports were placed on the right side and two on the left.
- The dissection was carried out through the holy plane of heald; the ureter was identified and safeguarded.
- Inferior Mesenteric Artery (IMA) was identified. The dissection was carried out till 5 cm above the diverticula towards the spleen laterally, pancreas superior-medially, and splenic flexure was mobilised.
- Sigmoid colon was dissected from the bladder.
- Rent in the bladder edge was identified with a cystoscope and laparoscopically.
- No other rents were seen during cystoscopy and rest of the bladder mucosa appeared normal.
- Rent in the bladder wall was freshened and sent for histopathological examination.
- Bladder was closed in two layers, and integrity was checked.
- No leakage was found, and the bladder was drained with a 16 Fr silicon catheter.
- The bowel was divided distally 7 cm from the specimen, with Endo GIA Purple 60 staplers and the specimen, along with the bowel, was brought through a small incision on the lateral aspect.
- The specimen was then divided from the bowel with a 7 cm margin, handwill was fixed to the colon with 2-0-prolene and put inside the abdomen.
- Pneumo peritoneum was again created after cleaning the rectum.
- The circular stapler was inserted and fired after fixing it to the handwill.
- Leak test was done, which came negative.
- Thorough wash was given with saline.
- Drain was placed towards the pelvis.
- Hemostasis was secured. The skin was closed with staples.



Cystoscopy view of Colovesical Fistula



Laparoscopic view of Colovesical Fistula



Sigmoid Colon Resection

POST PROCEDURE

The patient tolerated the procedure well without any complications, and the post-operative period was uneventful. The patient was discharged in a stable condition.

DISCUSSION

The issue of colovesical fistula treatment remains controversial. It has not yet been established which is the best therapeutic approach when we suspect a colovesical fistula. Also, the American Society of Colon and Rectal Surgeon Task Force guidelines on sigmoid diverticulitis do not state the most appropriate treatment for colovesical fistula.

Historically, fistulas that complicated diverticular diseases, were treated with a preliminary colostomy, resection, and final colostomy closure in a three-stage procedure. In 1950, Charles W. Mayo proposed the one-stage resection. To date, the standard treatment of colovesical fistula is the removal of the fistula, suture of the bladder wall after curettage or excision of the bladder cuff, and colic resection with one or two-stage anastomosis. An omental flap is commonly placed between the bladder and colon to minimise recurrence rates. Usually, the approach is open because the laparoscopic one is burdened by a high conversion rate and morbidity. Only a few cases of laparoscopic treatment of diverticulitis fistula are reported in the literature. Laparoscopic surgery for complicated diverticular disease, including fistulas, is yet to be accepted as the treatment of choice. It is usually reserved for selected cases. Internal fistulas that complicate diverticulitis are usually associated with a high conversion rate and post-operative morbidity due to the presence of dense adhesions. However, in several series, conversion is limited to acceptable rates. High technical skills could lower conversion rates and intra- and post-operative complications. Other authors report that the application of laparoscopy is irrelevant to recurrence rates.

Colic resection has high mortality and morbidity rates due to adhesions, paracolic abscesses, colon and mesocolon shortening, and colic parietal thickening caused by diverticulitis. For this reason, only a few authors prefer a conservative approach. Narayan Singh et al. reported a modified Hinchey classification for surgical decision-making in patients with perforated left-sided diverticulitis with faecal peritonitis. They suggested colic resection only in colic scarring and stricture and a possible conservative treatment for colovesical fistula. Lewis and Abercrombie reported the results of 3 cases of colovesical fistula treated with open conservative surgery, removing only the fistulous tract, and suturing the parietal defects.

The follow-up at 12 and 26 months was successful in two cases. In the third case, a urinary

infection occurred, and the patient died one year after surgery for bowel obstruction, but no fistula recurrence was evident. Moorthy et al. performed five laparoscopic assisted procedures for colovesical fistulas. The bowel was mobilised intracorporeally and then exteriorised through a small incision. The mesenteric vascular division and bowel resection were carried out extracorporeally in three cases. In 2 cases, due to Crohn's disease and diverticulitis, only stapled fistulectomy was performed without colic resection. The patient with a colovesical fistula secondary to diverticulitis had a fistula recurrence. According to our knowledge, this is the first time colovesical fistula has been treated with totally laparoscopic surgery. Our surgical technique is a laparoscopic approach, including dissection and removal of the fistulous tract, curettage of necrotic and inflammatory bladder tissue surrounding the fistula site, and suturing and placement of fatty tissue between the colon and bladder. The critical point is to carefully prepare the surgical plan between the colon and bladder wall in order to identify the fistulous tract. Identification of the correct cleavage plane allows one to reduce the intra- and post-operative bleeding, the conversion rates, and the post-operative morbidity. This technique could be performed laparoscopically with good technical skills and meticulous dissection.

In most cases, a fistula is secondary to polypectomy in a sigmoid diverticulum, where the muscle layer is absent, and the wall is weaker. Trecca et al. report that the risk of colon perforation after colonoscopy is 0.01-3%. The incidence increases when the colonoscopy is associated with operative procedures such as biopsy or polypectomy. No colonoscopic procedure was done for this case; it was a spontaneous fistula due to diverticular perforation and secondarily causing a Colovesical Fistula.

CONCLUSION

Laparoscopic surgery with colic resection for colovesical fistula is safe and feasible if done with good technical skills and meticulous dissection with excellent team effort. A more extensive series is necessary before proposing it as a standard treatment. Laparoscopic surgery may represent a therapeutic option in selected cases, we believe. The operative time is comparable to the open approach with colic resection. The post-operative pain was low, as proved by the low VAS scale score and the low analgesic therapy requirement. These results compare favourably with those reported for open surgery. The early restoration of bowel movement due to preserving intestinal integrity and the laparoscopic approach allows shorter hospital stays and faster post-operative recovery.

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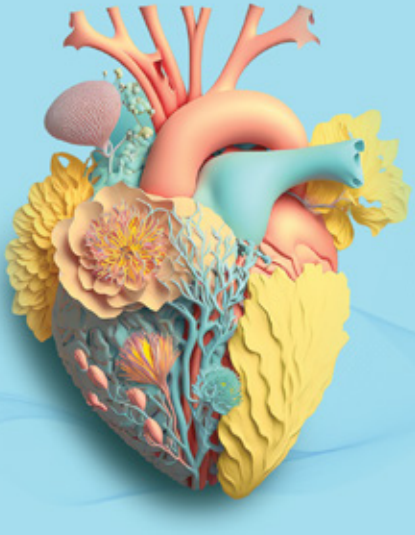

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