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"Recurrent Lower Abdomen Pain, An Introspection."

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Abstract:
Introduction: *Recurrent Pain Lower Abdomen, ('RLAP'), With/Without Previous Appendecectomy & Or Other Surgeries, Comprise Large No. Of Patients Being*
Treated Indiscriminately For Years, Without Proper Diagnosis.
Aims/Objctive: *The Several Variable Aetio-Pathogenesis Factors & Management Modalities, In Different Age, Sex,Occupational,Socio-Economic,Geographical Group Patients, 'RLAP'Studied Under Broad Categorization Of,Post- Appendecectomy Cases(Or Other Surgery);Group 'A'*
& Without Prior Appendecectomy(Surgery); Group 'B'.
Methods: *The Comparative Statistical Analysis Of More Than 2500 Cases Of 'RLAP-A &B', By Meticulous Methodological Discrete Cauasative Factor Diagnosis & Needed Specific Management. Beside Routine Causes Included Obscured But Definitely Causative Clinical Entities:Ileo-Caecal Lesions; Angulations Acute, Obstuse Etc, Caused By Appendicular Stump ? Invagination Leading To Anatomico-Functional Changes, ,Stump Appendicitis, Appedicular Lump Formation Stages, Especially 'Catarrhal Appendicitis' Maeckel's & Other Diverticular Disease Variants, Invaginated Diverticulum Etc, Mobile Caecum,Recurrent Sigmoid Volulus, Adhesions, N. Root Radiculopathy Symptoms & Others.*
Results: *The Discrete Causative Lesion Dx & AppropriateTreatment Plan (Curetive & Or Maximally Palliative), With Secured Sincere Compliance,Formed The Basic Fundamentals For Overall Better Result Outcomes.*
Conclusion: *The Study, Is An Attempt Towards Overall Management Guide-Lines Plan For A Very Common Clinical Dilemma, To Secure Overall Disease Symptom Free Life.*
Key-Words: *1.Rec.Lower Abdomen Pain With/WithOut Previous Surgery (RLAP-Group A & B)*
2.Discrete Clinico-Investigatory Methodology
3.Obscured Definite Causative Lesions
4.Innovative Management Techniques.

I. 'Introduction'

'Recurrent Lower Abdomen Pain', With/Without Previous Appendecectomy And Or Other Surgeries, Comprises Large No. Of Patients Being Treated Indiscriminately For Years, Without Proper Diagnosis. Enunciated The Need Of The Present Multicentric Study, Conducted During More Than Two Decades Of, Intensive Clinical Practice, At Different Workplaces, In The Available Limited Resources Circumstances.[1,2,3,4]

II. 'Objective'

The Several Variable Aetio-pathogenesis & Management Aspects Of,'Recurrent Lower Abdominal Pain ('RLAP'), In Different Age, Sex, Socio-Economic, Geographical Back-ground Groups Of Patients, Studied Under Broad Categorization Of:

Post- Appendecectomy(& Or Other Surgery) Patients ; 'RLAP'Group 'A' &
Cases Without Prior Appendecectomy(& Or Other Surgery); 'RLAP'Group 'B'.

Generalized Diffuse Lower / Left / Right Abd. Pain & Or InfraUmblical SupraPubic Region Pain Clinical Entities, Have Been Categorically Included, As & When,
In Accordance Of Occurrence. [5,6,7,8]

III. 'Material & Methods'

The Closely Monitored Observational Study, A Comparative Statistical Analysis Of More Than 2500 Cases Of 'RLAP', Include:Large Percentage,'RLAP'; Group 'A' Pts.(With H/o Previous Surgery);Diagnosed, Managed For Different Established Causes,With Special Emphasis, About 1000 Cases Of, 'RLAP', Group'B' Patients (WithOut Previous Surgery).

The **Meticulous Methodology** Comprises: Discrete Causative Factor Diagnosis, By Expert Clinical History & Examination, Supported With Relevant Available Investigations,Followed By Treatment Guide-lines Consisting Available Conventional Measures & Also Simple, Safe, Successful, Easily Performed Innovative Discussed Treatment Modalities,With An Aim Of Achieving Life Long Symptom Free Patient,
Aware Of Overall Management Programme For Proper Compliance.

'CLINICO-INVESTIGATORY DIAGNOSTIC APPROACH'
The Important ''Diagnostic Tools'':
(I) CLINICAL HISTORY;
(A)Particulars Of The Pt.: Age, Sex,Religion, Marriage, Occupation, Residence, Socio-Economic Status Etc.

(B)Chief Complaints:

1. Pain; Time Of Onset, Mode Of Onset, Duration,Site, Shifting, Radiation, Referred, Character,Effect Of Pressure, RelationTo Jolting/Walking/ Respiration/Bowels & Micturition, Better / Worse Factor, Relieving Factor Etc.

2. Vomiting; Frequency ,Vomitus Character, Quantity,Relationship With Pain. Etc

3. Bowels; Relative/ Absolute Constipation, Mucus,Blood Discharge, Pain Defaecation.Suggestive H/o;Worm Infestations,GIT Tuberculosis (Gas Ball Movement, Alternate Diaorrhoea With Constipation,Anorexia,Weight Loss,Other Constitutional Symptoms),Any Other Ano-Rectal Pathology

4. Micturition;Dysuria, Haematuria, Strangury,Retention,OverFlow,Dribling Etc.Suggestive H/O:Urolithiasis,Geographical Distribution Etc. Prostatitis;Discomfort, Burning,Pain,Blood & Or Pus With Semen Discharge Any Other Genito-Urinary Pathology.

(C)Personal History: Menstrual, Obstetrical, Gynaecological History,Especially For White & Or Other Discharges P/V Etc.History Of Intoxicants Etc.

(D)Past History: Suggestive Relevant Previous Episodes, Treatment
? Previous Surgery Details Etc.
Special Emphasis On Suggestive H/o: Gen. Chr.Diseases,Infections,Infestations
e.g T.B, Worms, Crohn's Disease,Ulcerative Colitis, IBS etc

(II) CLINICAL EXAMINATION;
Expert Discrete Cl. Approach For Exam; Abdomen, Lower Chest, Back Include
"CLINICAL SIGNS": Pointing Test,Bed Shaking Test (Bapat),CoughTest,Musle Guarding Rebound Tendernes (Blum Berg's Sign/ Release Sign),Rovsing's Sign,Psoas's Sign (Cope's / Zachary Cope Test),Obturator's Sign,Baldwing's Test,Sherren's "Δ" Of Hyperaesthesia,Amoebic Point (Boas Sign),Recently In Practice Line Tests Etc.& The Various Other Classical Signs For Cl. Evaluations.
No Abdomen Exam. Is Complete, Without;Thorough Ant. Abd.Wall Parietes Including Umblicus,Inguinal Region,Genito-urinary System Exam,Perineal, Peri-Anal, Per-Rectal, Proctoscopy Exam.Especially In Female Patients; Expert Gynae Check Up,Including P/V, Bimanual Exam. Etc.
Clinical Assessment Pertaining To: Vertebral Column, Parities,Ext. Genitalia, Perineum & Ano-Rectal Region,Forms An Integral Part & Basis Of,Meticulous Clinical Evaluation Of All Cases Of Pain Abd.,Esp. Lower Abdominal Region,More So In Hesitant, Ignorant, Adolescent Or Female Patients.
"Ant. Abd. Wall (Parieties) Lesions ": Umblicus;Various Congenital/Accuired Lesions,
Namely Umblical Granuloma, Omphalitis, & Other Inflammatory Conditions,
Patent Vitello-instestinal Duct (Urachus), Etc.
Parieties;Abscess,RectusSheath Haematoma,Spigelian,Lumbar,Incisional HerniasEtc.

(III) INVESTIGATIONS; [21,22,23] [39]
(1.)Routine Investigations: Blood Group, Hb, TLC, DLC, ESR,, BT CT, Urine: R & M, Blood Sugar (R), Blood Urea, S. Creatinine, S. Uric Acid, LFT, HIV For Aids, HbsAg, HCV, X-ray Chest, ECG.
(2.) Specific Investigations: Widal Test (Enteric Inf.), S. Amylase, LDH, S.Calcium, Methaemalbumin (Pancreatitis),CRP >6 Mg./L. (Appendicitis).
Urine Analysis With Special Comment Upon;? Crystalluria,Sedimentations Etc.
Urine C& S,Porphyrias
Stool Analysis: Infections, Worms,Undigested Food Particles Etc.
& Other Recently Available Specific Investigatons : Serology,Immunology, Immuno-Assays,Radio-Isotope Studies,Tumor Markers Etc.
For Different Infections, Inflammations, Infestations, Chr. Illnesses, Auto-Immune Disorders, Malignancies Etc.

(3.)Radio-Diagnosis:
Radiology:X-ray Abdomen Both Domes Erect;(Gas Under Diaphargm: Visceral Perforation,ROS/SOLs : Urolithiasis Etc),Tomography.
Plain X-ray Abdomen/Spine;**Closed Observation Of Inter-vertebral Disc Spaces.**
Ultra-Sonography: USG Whole Abdomen With Full Bladder,Post Void Residue;
Visceral Lesions, Free Fluid Peritoneum Etc.,Uterus & Adenaxae Disease Status.
Prostatism, Dysuria,Other Obstructive Uropathy Causes Including Cystitis,
Stricture Urethra Etc.
High Resolution USG: Diverticulitis,Appendicitis,Bowel Wall Thickness/Abscess
USG Inguino-Scrotum: With/Without **Color Doppler's** Study,Valsava's Manovures;
Testicular & Assoc. Anatomical Structures Lesions.
CT, Contrast Enhanced Computerised Tomography(CECT), MRI Etc.:
Focussed CT Scan; Appendicitis,Ureteric Colic(If Contrast Allergy)
CECT Whole Abdomen Performed With Ease & EfficacyNowadays, Has Definite Advantage Of Accuracy & Precision Over Barium, IVU,Cysto-urethrography, R.G.U Etc.
Contrast Radiology & CT Scan Alone Or In Combination;
Ileo-caecal Region Pathologies,Obstructive Lesions, Angulations, ? Cause,IC Region Lympth Nodes, Meso-appendix, Appendicular Stumps, Appendicoliths, Phlegmons Etc.
Maeckel's Diverticulum.Other Diverticulums Related Diseases,
? Invaginated, Introverted Diverticulums
DigitalRadiology(DRSystem,CRSystem) Revolutionized,
The Spot X-Ray Film Techniques..
Contrast Radiology:I.V.P. : Emergency,
Barium Studies Including Ba Enema. Double Contrast Studies,
Ileo-caecal Region Studies,Colonography CT, MRI Guided Diverticulography
I.V. Cholangiography, ERCP, MRCP.
(4.) Endoscopy: Upper G.I.T; APD,Gastritis,Reflux Oesophagitis,Bleeding Sources
Lower GIT; Ano-Rectal Lesions,Colonoscopies (+_)Contrast, ? DoubleContrast Etc.
(5.) Radio-Isotope / Scintigraphics Study :
A) Indium-111 Labelled WBC; Esp.USG NegativeVisceral Perforation
B) Technetium 99m Labelled WBC; Pediatric Appendicitis
C) Technetium 99m Scan; Maeckel's Diverticulum Etc.
(6.)Diagnostic Laproscopy
(7.)Exploratory Laprotomy

IV. 'Methodology'

All Cases Of Pain Abdomen Of Varying Duration & On Set, Need Meticulous Clinical Assessment & Diagnostic Evaluation,To Diagnose The Causative Disease & Decide Subsequent Medical & Or Surgical Management, EitherWise.

'PAIN ABDOMEN:DIFFERENTIAL DIAGNOSIS'
(A)Intra-Abdominal Causes; [11,12,13,]
1. Inflammation- [58,59,60,61] Acute Appendicitis, Acute Cholecystitis, Acute Salpingitis, Acute Diverticulitis, Acute Regional Ileitis, Acute Pneumococcal Peritonitis, Acute Non-specific Mesenteric Lymphandenitis, Amoeebic Liver Abscess. [40]
2. Perforation-Peptic Ulcer, Typhoid Ulcer, Diverticular Disease, Ulcerative Colitis etc.
3. Acute Intestinal Obstruction-
(A) Mechanical-
(I) In The Lumen- Gallstone, Round Worms, Faecolith, etc.
(II) In The Wall- Tubercular Stricuture, Intussusception, Growths etc.
(III) Outside The Wall- Additional Bands, Volvulus,External And Internal Herniae etc.
(B) Toxic- Paralytic Ileus.
(C) Neurogenic- Hirschprung's Disease.
(D) Vascular- Occlusionof Mesenteric Vessels By Embolism Or Thrombosis.

4. Haemorrhage e.g. Rupture Of Ectopic Gestation, Ruptured Lutein Cyst, Spontaneous Rupture Of Malarial Spleen. Rupture Or Leaking Acortic Aneurysm, Aortic Dissecting Aneurysm. [52,53,54,55]
5. Tortion Of Pedicle e.g Twisted Ovarian Cyst, Spleen etc. [56,57]
6. Colics e.g (I) Biliary, (Ii) Ureteric, (Iii) Appendicular And (Iv) Intestinal

[14,15,16,17,18,19,]

(B)Extra-Abdominal Causes;

1. Parietal Conditions e.g Superficial Cellulitis Of The Abdominal Wall, Gas Gangrene Of The Abdominal Wall, Abscess Of The Abdominal Wall, Rupture Of Rectus Abdominis Muscle And/Or Tearing Of Inferior Epigastric Artery.

2. Thoracic Conditions e.g. Diaphragmatic Pleurisy, Lobar Pneumonia, Spontaneous Pneumothorax, Pericarditis, Angina Pectoris, Coronary Thrombosis Etc.

3. Retro-Peritoneal Conditions e.g.Uremia, Pyelitis, Dietl's Crisis, Retroperioneal Lymphangitis And Lymphadenitis, Leaking Aneurysm Of The Aorta, Dissecting Aneurysm Of The Aorta Etc.

4. Diseases Of The Spine, Spinal Cord And Intercostal Nerves e.g. Pott's Disease, Acute Osteomyelitis Of Lower Dorsal Or Lumbar Vertebrae, Gastric Crisis In Tabes Dorsalis, Herpes Zoster Of Lower Intercostal Nerves And Intercostal Neuralgia.

5. General Diseases e.g. Malaria, Typhoidfever, Prophyria, Diabetic Crisis, Sickle Cell Anaemia, Haemophilia, Purpura, Small Pox, Etc. [5,6,7,8]

(C)Paediatric Patients; Acute Appendicitis; Intussusception;Intestional Obstruction By Round Worms, Congenital Bands Including Meckel's Diverticula;Meckel's Diverticulitis;Primary Peritonitis. [35,36,37]

(D)Female Patients;Ruptured Ectopic Gestation;Ruptured Lutein Cyst;Twisted OvarianCyst;AcuteSalpingitis;Tubo-ovarian Abscess;Torsion Or Degeneration Of A Uterine Fibroid.

(E)Medical Causes: U.T.I., U.R.T.I., M.I., Munchausen's Syndrome

(F)Rare Causes: HIV,Pre Herpetic Pain Rt. X, XI, Dorsal Nerve, Tabetic Crisis, Spinal Conditions (T.B., Metastasis, Ostoporosis, Multiple Myeloma), Porphyria, Diabetes, Abdomenal Crisis, Typhlitis,Lukaemic Ileo-Caecal Syndrome. [9,10]

[20] **The Above Listed Pain Abd.Causes, Subjected To Discrete 'Clinico-Investigatory Analysis' Formed The Basis Of The Proposed Appropriate Tt.** [29,30,31,32,33,34]

'**SPECIFIC MANAGEMENTS':Needed Surgical (+_) Supportive Measures For;**

Varying Origin Recognized Manifestations Of Generalized Diseases,e.g Tuberculosis Etc,Lymthadenopathy Causes: Lymthomas,Haemopoietic System,Infections, Inflammations, Infestations: Amoebiais, Typhlitis, UTIs, Ureteritis, Prostatitis, Worms Etc

Umblicus, Abd. Parietes,Ext. Genitalia, Perineum, Ano-Rectal Pathologies Etc.[20] **IVD Space Related Radiculo-Neuropathy Causes** Of Nerve Root Origin Lesions e.g P.I.V.D, Abd. Parietes Ant. Cutaneous Nerve Entrapment Syndrome. [38]

Urolithiasis,Crystalluria, UTIs Etc [28]

Other Chr.Diseases;Diverticular Diseases,Polyposis,Ulcerative Colitis, Crohn's Disease, IBS Etc, Volvulus,Malignancies, Acute Mesenteric Vascular Occlusion, Abdominal Aortic Aneurysm & Others. **[Table- 1 & 2]**

"COLONIC THUMB PRINTING"
VASCULAR DISORDERS;
Occlusive Vascular Disease
Intra-Mural Haemorrhage(Anti-coagulants, Bleeding Diasthesis)
Traumatic Intra-Mural Haematoma
Haemolytic-Uraemic Syndrome
Hereditary Angio-Neurotic Oedema
INFLAMMATORY DISORDERS;
Ulcerative Colitis
Crohn's Disease
Retractile Mesenteritis
INFECTIOUS DISORDERS;
Amebiasis
Schistosomiasis
Cyto-Megalo Virus
Strogyloidiasis
Pseudo-Membranous Colitis
Typhlitis
Staphylo-Coccus Colitis
Anisakiliasis
NEOPLATIC DISORDERS;
Lymphoma
Haemato-Geneous Metastasis
MISCELLANEOUS DISORDERS;
Amylodosis
Endometriosis
Diverticulitis or Diverticulosis
Mesenteric Or Peritoneal Lesions
Pneumomatosis Cystoides Coli

"ISCHAEMIC COLITIS CAUSES"
1.Thrombosis
AtherSclerosis
PolyCythemic Vera
Portal Hypertension
Colonic Malignancies
HyperViscosity Syndrome-Platelet Abnormalities
High Mol.Wt. Dextran Infusion
2.Embolism
Left Atrium(Atrial Fibrillation)
Left Ventricle(Myocardial Infarction)
Aortic Atheromatous Plaque
3.Vasculitis
PolyArteritis Nodosa
Lupus Erythematosus
Giant Cell Arteritis(Takayasu's Arteritis)
Buerger's Disease
Henoch-Schonlein Disease
4.Iatrogenic Vascular Trauma
Aortic Reconstruction
Adjacent Intestinal Resection-Anastomosis
5.Non-Occlusive Ishaemia
Shock-Septic/HypoVoluaemic
Congestive Cardiac Failure
Spontaneous Ischaemic Colitis

Gender (female) Specific Entities:Menstrual Disorders From Menarchae To Menopause;Of Varying Aetio-Pathogenesis, Extent, Age Group,Child Birth Related,
PID, White & Or Other P.V Discharges,T.O Masses Of Different
Aetio-Pathogenesis,Extent, Epsilateral & Or Contralateral Tumors:Fibroids,Malignancies & Others. [24,25,26,27,]

The GROUP 'A' Patients After Exclusion Of, Variably Different Probable Listed Causes Beside Appendicitis, As For GROUP 'B' Patients, Were Comprehensively Studied For Different Likely Causes, Especially In Acute Presentations:
1.Caecal Diverticulitis 2.Epiploic Appendagitis 3.Omental Infarction 4.Rt. Sided Ileal Diverticulitis 5.Neurogenic Colitis(Typhlitis) 6.Iscaemia;Distal Small Bowel, Rt. Colon
7.Mucocele 8.Carcinoid 9.Caecal Carcinoma.

"APPENDICEAL LESIONS"
Post-Operative(Inverted Stump, Adhesions)
Acute Appendicitis, Calculus, Faecolith, Abscess
Diverticulosis, Intussusception, Invagination.
Mucocele, Carcinoid Tumour, Myxoglobulosis,
Adeno-Carcinoma, Spidle Cell Tumour
Metastasis,Lymphoma, Endometrial Implantation
Crohn's Disease,Ulcerative Colitis
Amoebiasis,Ascariasis,Tuberculosis,Trichuriasis,Typhoid Fever

"ENLARGED ILEO-CAECAL VALVE"
Normal Variant
Intussusception, Ileo-Colic Prolapse
Intra-Mural Haematoma, Cathartic Abuse.
Crohn's Disease, Tuberculosis, Typhoid Fever, Amoebiasis, Yersinia Entero-Colitis
Actinomycosis, Anisakiasis.
Fatty Infiltration, Lipoma, Lymphoma
Carcinoid , Lymphoid HyperPlasia,Villous Adenoma,Adeno-Carcinoma

"CAECAL FILLING DEFECTS"
General Causes Of Colonic Filling Defects
Appendiceal Lesions, Intussusception Of Appendix, Maeckel's Diverticulum,
Lymphoma, Distal Ileum Diverticulitis
Ameboma, Lipomatous Ileo-Caecal Valve,
Adherent Faecolith(Cystic Fibrosis)
Solitary Benign Ulcer, Burkitt's Lymphoma, Metastasis(Pancreas, Ovary, Colon, Stomach)

[TABLE-3,4,5] Post Surgical Group 'A' Patients;In Addition To Routine Causes Were Comprehensively Evaluated & Managed For Common Definitely Causative Clinical Entities:

V. 'ILEO-CAECAL REGION PATHOLOGIES'

The Clinical Entities Involving, Anatomico-functional Changes Of Ileo-Caecal Region, Clinically Manifesting As Symptoms, Simulating Variable Extents Of 'Intestinal Colics' To 'Obstructive Features', With Demonstrable Angulations Of Different Varieties; Acute, Obstuse Etc, As Evident By; Double Contrast Digital Radiography,CECT,Diagnostic Laproscopy & Endoscopy Etc.,Need Appropriate Surgical Corrections Of Ileo-caecal Region Obstructive Variants.

Aetio-Pathogenesis:

1.The Competion To Perform 'Appendecectomy', By Smallest Possible Cosmetic Incisions WithOut Proper Exploration Of About 1Ft. Of Small Intestine For Various Anatomical Variations?Diverticular & Or Other Disease, Anatomical Position Of Appendix, Meso-Appendix Status, Per-Operative Assessment Of I-C Region For Associated Adhesions, Lympth-Adenitis,& Or Other Common Pathologies. [46]

2.'Remmanant Stump Appendicitis' Appendicular Stump ? Invagination, (? Purse String Suture, Different Techniques) & Or Various Inflammatory ?Infective Tissue Reactions Leading To IC Region Adhesions Formation & Resultant Variable Anatomico-Functional Variants.

Patho-Physiology: The InDiscretely Applied 'Purse String Sutures' & Or Other Technique For 'Stump Invagination' Procedures During Appendecectomy, Being The Most Important Aetiology Factor For Resultant Morpho-Physiological Changes In The IC Region, Manifesting As Obstructive Symtoms Like Intestinal Colics & Or Otherwise,Effecting Propulsive PressurePeristalsis From Ileum To Caecum (I.C Valve), And Further Forward Towards Ascending Colon Upwards,As Evident By Closely Monitored Digital Contrast Radio-Diagnosis, Diagnostic Laproscopy, Exploratory Laprotomy Etc.

Thus The Operative Recommendations For- By On Needle TransFixation & Or 'Free Tie' Methods, Using Absorbable Suture ,Firmly Secured,Less Than 1 Cm, Disinfected 'Appedecectomy Stump' Prevents Of FUCs Of 'Stump Appendicitis' Occurrence, While Safely Excluding The Need For 'Stump Invagination Procedures'

There By Minimizing Iatrogenic'IC Region' Anatomico-Functional Changes

e.g Commonly Encountered Angulations Of Different Varieties,Leading To Obstructive Symptoms Of Variable Dimensions. **[FIGURE- 1]**

3. Extent Of Inflammatory Changes In The IC Region,Stages Of 'Appendicular Lump' Formation,Appendicular Abcess, Gangrene, Necrosis, Perforation Etc.

4. Different Variables Of 'Catarrhal Appendicitis',Recent Increased Prevalence, With Difficult Diagnosis & Management, D/TPaediatric Age Group Prevalence,Masked Viral Manifestations,Rapidly Progressive Disease Course, Comparative Low Susceptibility To Available Medications.

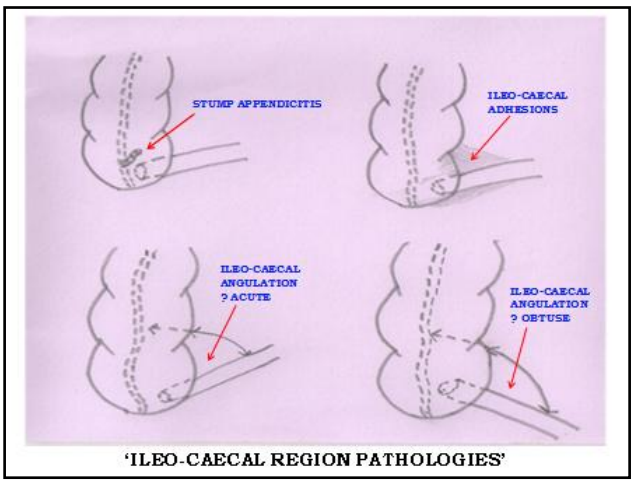

FIGURE-1

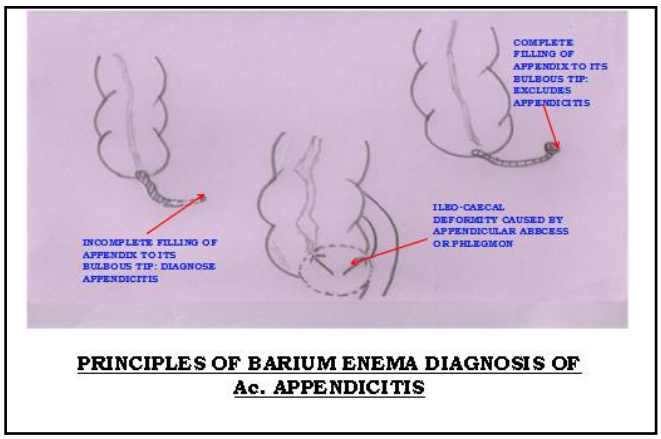

FIGURE-2

Treatment Modalities:For Resultant Ileo-Caecal Region Anatomico-Functional Changes (?Different Angulations Varieties) [FIGURE- 2]
With Well-Documented Clinico-Investigatory Evidence, Include-

1.Adhesionolysis & Anatomy Restorage
2.Resection Anastomosis Of Variable Extents? Terminal Ileum To Caecum Involving Taenia Region/Just Adjacent Ascending Colon With/WithOut Resections,Thus Avoiding Surgical Trauma & 'Dump Syndromes', While Maintaining Adequate IC Valve Competency Etc.
3. Management Of Gen. Diseases Like Koch's Abdomen & Other Adhesions Promoting Factors. Etc.

2.'DIVERTICULAR DISEASE VARIANTS'
Diverticuluae: Small Protrusions/ Outpouches Formed Of Various Layers Of GI Tract At Different Level Of Its Course.
Maeckel's Diverticulum: Most Common Congenital Anamoly Of Small Intestine,
Equal Male/FemaleIncidence Ratio. **[FIGURE- 3]**
Umblical Anamolies: Persistent Vitelline(Omphalo-Mesenteric) Duct,Vitello-Intestinal Fistula,Vitello-Intestinal Sinus,Vitello-IntestinalCord/Band,Around Which VolvulusOccurs
[FIGURE- 4]

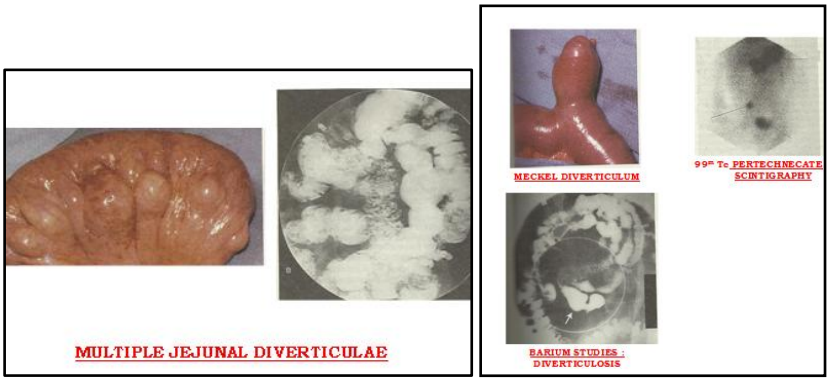

FIGURE-3 & 4

Clinical Evaluation: Uncomplicated (Simple Diverticulitis), Complicated Diverticulitis; Peritonitis, Perforation, Hemorrhage, Obstruction, MalAbsorption & Associated Diseases.

'Congenital GIT Duplications': Occur In Conjunction With Other Malformations
Congenital, Accuired;D/T Involvement & Atrophy Of Muscularis Mucosa Propria,
Attain Large Sizes, (e.g Giant Colonic Diverticula)

Duplications; Can Be Tubular,Cystic,Non-Communicating- Distended With Mucosal Secretions, Cystic Intra-Abdominal / Retro-Peritoneal Masses, Prim. AdenoCa, Spinal Deformities,Neuro-Enteric Fistulization, Cyst Formation, Meningitis & Other NeuroLogical Complications May Occur.

Histology; EctoDermal , EndoDermal, HeteroTrophic
Endodermal Elements e.g Gastric HeteroTropia[47,48,49,50,51]

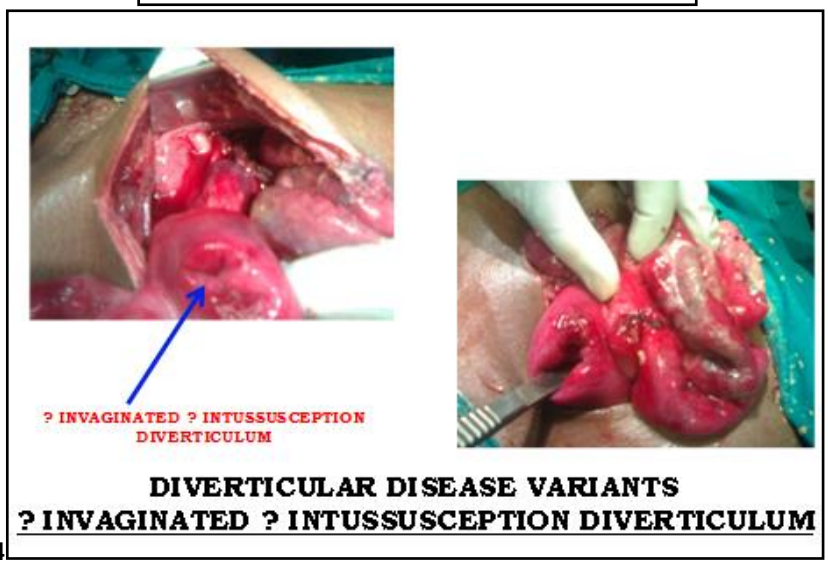

FIGURE-4 **FIGURE-5**

Reported Several Cases, Introverted / Invaginated Diverticulum(Intussusception)

With Solitary/Multiple Diverticulae Of Different Sizes, At Different Levels Of 'Terminal Ileum', With Variable Cl. Manifestations. [FIGURE- 5]
Treatment: 1.Diverticulectomy 2.Resection Anastomosis

3.'MOBILE CAECUM'
Not An Uncommon Clinical Entity, Clinically Evident As: Palpable, Tubular, Structure In R.I.F,Rolls Within The Palpating Fingers
An Important Attributable Cause, For Rec.Rt. Lower Abdominal Pain With /WithOut Previous Appendecectomy Or Other Surgery, Some Times Simulates 'Intestinal Colics' In Severity.
After Excluding & Or Managing Other Medical & Or Surgical Causes.
The Simple, Safe, Easily Performed 'Surgical Management', Ensured Symptom Free Life To Large No. Of Patients.
Operative Technique: Several Patients Recorded Almost Complete Cure By,**"Caecopexy";**Fixation Of Caecum Laterally,To Rt. Paracolic Gutter Peritoneum,By Few (About 2-4) Meticulous Stiches, Sero-Muscular Depth,Using Non-absorbable Or Delayed Absorbable Sutures(Good Results Achieved With Prolene/Vicryl 1-0/2-0, R.B).
[FIGURE- 6]

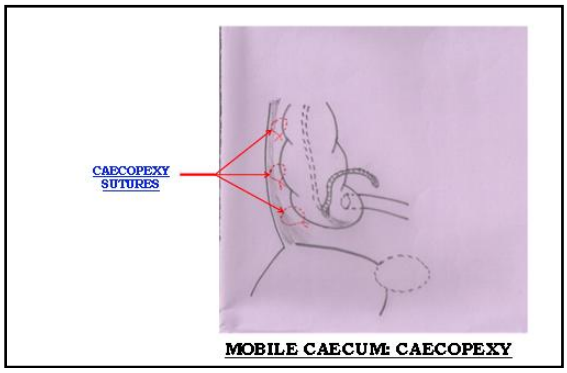

FIGURE-6

Laproscopic Approach, Is Also Successful, As An Independent Or Concomittant Procedure.

4.'ADHESIONS'
Intra-Abdominal /Peritoneal Adhesions:Generalized, Diffuse & Or More Lower Abdominal, With/WithOut H/o Previous Surgery(Single & Or Multiple) e.g Appendecectomy, LSCS, Tubectomy& Or Other Abd./Pelvic Surgical Procedures
Aetio-Pathogenesis:?Post-operativeCauses;Hge,Infection,DerrangedHealing
e.g Anaemia, Nutritional,Malignancy Etc. & As Manifestation Of Gen.
Disease Processes e.g TB
Dx: 1.Specific Invs; ESR,Montoux, Serology,Immunology Etc.
2.Radio-Diagnostic Measures; X-Rays, USG, CECT, MRI,Contrast Radiology
3.Diagnostic Laproscopy & Or Exploratory Laprotomy;
Important Significant Role As Diagnostic & Therapeutic Tool.**[FIGURE- 7]**

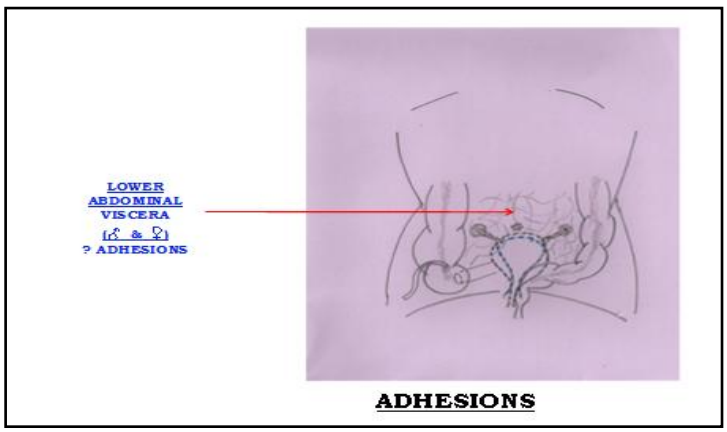

FIGURE-7

Treatment: 'Adhesionolysis'& Causative Specific Diseases Management -Role Of Peritoneal Lavage/Instillation Solutions e.g Low/High Molecular Weight Dextrans & Others, Have Been Differently Reported.

5.'SIGMOID VOLULUS RECURRENCE'

The Recurrence With Previous H/o: Conservative & Or Surgical Management
Enunciates Need For More Definitive Surgical Procedure, Based Upon
'Anatomico-Functional Preservation Of Organ' Principles.
'Sigmoido-Pexy': Fixation Sutures;(About 2-4, Non-absorbable / Delayed Absorbable,Interrupted, Appropriate Depth),From Lateral Wall Colon To
Lt. Paracolic Gutter / Pelvic Peritoneum.
Laproscopic Approach: SucessFul Results. **[FIGURE- 8]**

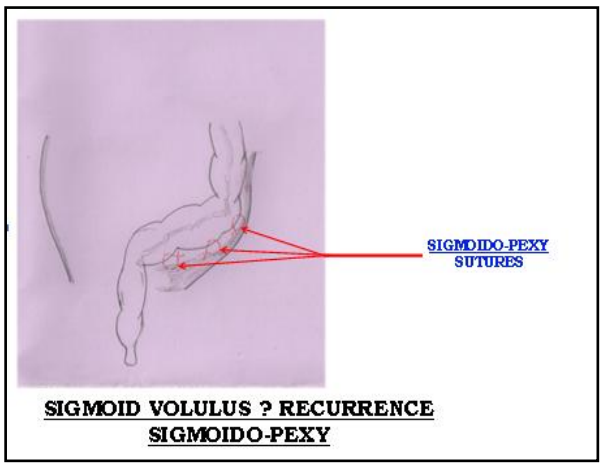

FIGURE-8

The Discussed Treatment Modality;Can Be Performed As **II Stage Emergency Procedure** With De-Rotation Of Rec.Sigmoid Volvulus Or **Primary 'Operation Of Choice'**.In Colloboration With Supportive Management Measures:
Diet Regulation Counselling Etc.
Extensive Resection, Anastomosis, Exteriorization Procedures,
Can Be Avoided Judiciously, In Accordance To,
'Organ's Vascular Status Safety Profile'.

6.'UROLITHIASIS'

In Certain Study Groups From Particular Geographical Distribution Regions, Appropriate Management Of **Clinically Diagnosed & Or Evidently Manifested Urolithiasis,**
Wih Different Stone Sizes,Of Variable Multiplicity & Ingredient Composition,
Associated Urinary Tract Infections Of Varying Extents,Formed One Of The Most Important Cause Of 'RLAP'; Group 'A' & 'B' Both.
In Absence Of Clinically Diagnoseable 'Stone Disease',Routine Urine Analysis For Crystalluria, Sediments Etc.,Provided The Clue For The Cause Of 'Colic',Due To Passage Of Small Crystals, Sediments Etc.With/ Without Associated 'Uricaemia'(raised Uric Acid Levels).
Almost All Of These Patients Were Able To Be Successfully Managed By,
Awareness & Strict Compliance Adherence To,**'Stone Analysis' Spectroscopy BasedScientifically Designed Dietary Regulations,**
Supplemented With Stone Disease **'Medical Therapy'**
& Or, Appropriately Adequate **Management Of UTI**,
Usually Associated With **Uro-Lithiasis**.
Medical Management:
- Forced Diuresis (LASIX THERAPY); FORCED DIURESIS(LASIX THERAPY);
Done for stones Size up to 5-8 mm, Remnant Post-ESWL stones.
Recommended ideal forced diuresis regimen: Complete compliance achievement ensures promising good results.
5% DNS ≈ 1,500 ml (3 vacs)
(+) R/L ≈ 1,500 ml (3 vacs)

(Alternating) In 24 hours, Repeat for 3 days.
Inj. Lasix 1 amp. Im, after (II) and (IV) Vac (Regular BP Monitoring).
The Role Of Injection Drotaverine (Drotin), Hyoscine(Buscopan), Diclofenac (Voveran) BD/TDS, Is To Achieve Round The Clock Analgesia And Spasmolytic Effect,
As Needed.
The Complete Treatment Schedule Duration Varies From 1 To 4 Days. The Patient Encouraged For High Fluid Intake With Normal Diet, To Ensure About >1.5 To 2 Litres/24 Hrs. Urine Output. Straining Of All Urine Is Done To Filter Passed Stone Particles (Stone Analysis Sampling).
- Medications;Commonly Used Preparations: **Zyloric (Allopurinol)—**uricemia (S. Uric Acid ≥7 Mg%) Decreases S. Uric Acid And Thus Disintegrating Uric Acid (Invisible) Component Of Stones.
Urinary Alkalizers, Cystone, Neeri, Distone, Calcury, Smash, Expel,Nephrol And Various Other Ayurvedic Preparations., Are In Common Practice
(? Geographical Stone Composition).
Tamsulosin (0.4) OD (Breakfast): Relieving Lower Urinary Tract Syndrome, Obstructive Uropathy Symptoms, Thus Facilitating Downward Stone Movement And Passage With Urine, Supported By Mefenamic Acid And Drotaverine Preparations (Tab. Drotin-m, Etc.).
The Role Of **Aminophylline, Nifedipine And Deflazacort** And Other Hormonal Preparations Has Been Reported.
- Diet Regulation; Awareness & Strict Compliance Adherence To, 'Stone Analysis' Spectroscopy Based Scientifically Designed Dietary Regulation Regimes
Besides Controversially Successful Various Medical Therapy Regimes, And OSS (Classical Open Surgical Stone Extraction), Other Methods Include:
(1) Percutaneous Nephrolithotomy(PCNL) For Renal Calculi,
(2) Retrograde Ureterorenoscopic Intrarenal Surgery,
3) Ureterorenoscopy (URS) And Lithoclastfor Ureteric Calculi,
(4) Laparoscopic Ureterolithotomy,
(5) Cystolithopexy/Cystolithoclast For Vesical Calculi,Using Lithotrite,
(6) Sandwich Technique (ESWL + PNL/Ureterorenoscopic Lithotripsy Surgery),
(7) Urtethral Stone Extractions Etc.

VI. 'Results'

The,Comprehensive Meticulous Clinico-investigatory Methodology,
For Diagnosis Of Relevant Specific Cause With Precision & Accuracy,
By Available Within Reach Investigatory Resources & Subsequent Treatment Plan Aimed At Curetive & Or Maximally Palliative Overall Result Out Comes,
Hundreds Of Patient Have Been Relieved,Of Cumbersome Agony Of Rec. Abdominal Discomforts,By Recommended Treatment Plan Guidelines,Medications, Life Style Regulations Etc. [62,63,64]

Large Majority Of Cases Were Able To Be,Successfully Managed With;
(I) The Medical Management Of Properly Diagnosed,Disease Specific Treatment Of:
Various Infestations, Infections, Inflammations e.g Amebiasis, Typhlitis, Worm Infestations,Tuberculosis, Chr. Mesenteric Lympthadenitis Of Variable Origins
& Different Variable Causes Of 'Intestinal Colics', Including Irritable Bowel Syndrome,Crohn's Disease,Ulcerative Colitis Etc.

(II) In Certain Study Groups From Particular Geographical Distribution Regions, Appropriate Management Of **Clinically Diagnosed & Or Evidently Manifested Urolithiasis,** Formed One Of The Most Important Cause Of 'RLAP'; Group 'A' & 'B' Both. **In Absence Of Clinically Diagnoseable 'Stone Disease',**Routine Urine Analysis For **Crystalluria, Sediments Etc**.,Provided The Clue For The Cause Of 'Colic',Due To Passage Of Small Crystals, Sediments Etc.With/ Without Associated 'Uricaemia'(raised Uric Acid Levels) & Were Successfully Managed By Appropriate Medication Therapy,In Combination To Life Style Regulations.

(II) FEMALE PATIENTS: Constituting A Large Group Statistically.
A Significant No. Of Patients, With Diagnosis & Management AwareNess Of Various Listed Problems e.g P.I.D, UTI Etc.Were Completely Symptom Free.
The Specialized Management Of Existing GynaecologicalPathologies e.g Fibroids, T.O Lesions, Endometriosis,Different Stages Of Malignancies Etc.,Were Of Definitive/Supportive Help.

(IV) PAEDIATRIC PATIENTS: Cautiously Secured Compliance, Clinico-Diagnostic Approach For Different Known Clinical Entities Being Mandatory.

(V) A Considerable No. Of Patients, from Different Occupations;Office Workers, Manual Labourers Etc With Long Duration Abd. Pain,Not Properly Diagnosed For Years:Diagnosed By Discrete Clinical Exam.-Observation Of **Simple Plain X-ray**

Abdomen/Spine With Needed Further Investigations,& **Subsequent Nerve Root Origin (Radiculopathy) Ortho-Peadic/Neurological Management Lines**, Including Physio-therapy With Life Style Regulations Etc. [41,42,43,44,45]

Prior Cautious Exclusion & Or Management Of Other Visceral Causes Was Secured, By Clinico-diagnostic Methods, USG Etc. . **[FIGURE- 9]**

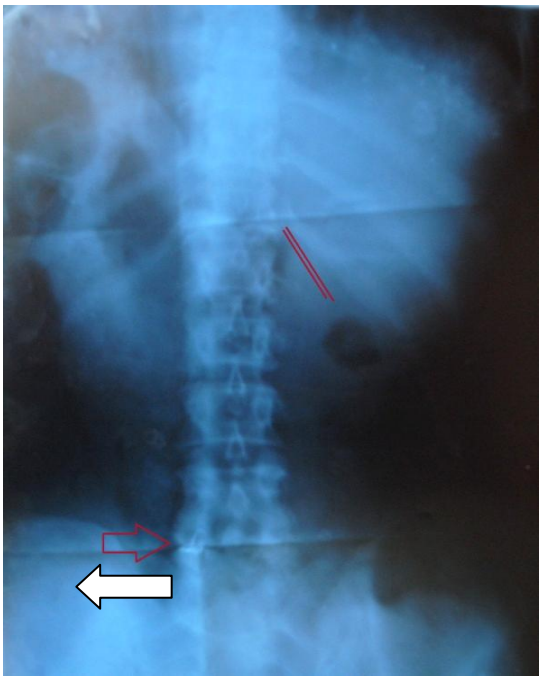

FIGURE-9

X-RAY ABDOMEN K.U.B

Note- Intervertebral Disc Spaces Upper & Lower Lumbar Vertebra

(VI) The Comparatively Small,Yet The Most Important Group Of Patients, With Diagnosed Uncommon Clinical Entities,Especially Were Managed With The Surgical Management Modalities Including 'Innovatives Techniques', Include:

-Remmanant Stump Appendecectomy.
-Maeckel's & Or Other Adjoining Diverticular Disease Variants.
-Corrections Of Ileo-caecal Obstructive Lesionse.g Angulations; Acute, Obstuse & Or Otherwise,Effecting Propulsive Peristalsis PressureFrom Ileum To Caecum (I.C Valve),And Further Forward Towards Ascending Colon Upwards & Resultant ? 'Intestinal Colic'., As Evident By Closely Monitored Digital Contrast Radio-diagnosis,Diagnostic Laproscopy, Exploratory Laprotomy Etc.
-Mobile Caecum:Caeco-pexy,
-Sigmoid Volvulus Recurrence Variants:Sigmoidopexy
-Adhesions:Different Aetio-Pathogenesis & Extents
Others…

Meticulous Clinical Approach Comprising,Causative Factor Pathology Identification,By Clinico-Investigatory Diagnostic Methodology & Appropriate Adequate ?Subsequent Needed Treatment,Including Described Newer Sucessful 'Innovative Techniques', With Sincere Compliance, Formed The Basic Fundamentals For Overall Better Result Outcomes.

VII. 'Conclusion'

Rec. Lower Abdomen Pain, 'RLAP' (Group 'A' & 'B'): With/Without Previous Appendecectomy & Or Other Surgery, With / WithOut Lt. & Or Rt Iliac Fossa,
InfraUmblical SupraPubic Region Pain & Or Gen. Diffuse Lower Abd. Pain,
Being A Significantly Prevalent Common Clinical Dilemma,Responsible For Agonising Experiences Of A Large Number Of Patients, From Different Walks Of Life.

The Present Multicentric Study,Conducted During More Than Two Decades Of
Intensive Clinical Practice,Is An Attempt Towards Overall Management Guide-lines Plan,
To Secure Disease Symptom Free Life.

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For All The 'Study Material Resources' Consulted &
Every Involved Personnel In The Surgical/Anaesthesia, Para-Medical Staff Team Especially Radio-Diagnostic Personnels, For Constant Co-Operation ThroughOut, Managing Hundreds (Thousands) Of Patients, In Available Resources Circumstances, SomeTimes In Very Difficult Situations, During Last More Than (2) Decades.

'References'

[1]. Millham FH. Acute abdominal pain. In: Feldman M, Friedman LS, Brandt LJ, eds. *Sleisenger & Fordtran's Gastrointestinal and Liver Disease*. 9th ed. Philadelphia, Pa: Saunders Elsevier; 2010:chap 10.
[2]. Yamamoto W, Kono H, Maekawa M, Fukui T. The relationship between abdominal pain regions and specific diseases: an epidemiologic approach to clinical practice. J Epidemiol 1997; 7:27.
[3]. Silen W. Cope's Early Diagnosis of the Acute Abdomen. In: Cope's Early Diagnosis of the Acute Abdomen, Oxford University Press, Oxford 1990.
[4]. Kirkpatrick J. The acute abdomen diagnosis and management. Baltimore: Williams and Wilkins, 1984.
[5]. Mellinkoff S. The differential diagnosis of abdominal pain. New York: McGraw-Hill, 1959.
[6]. Smith L. An atlas of pain patterns. Springfield, III.: Charles C Thomas, 1961. Copyright © 1990, Butterworth Publishers, a division of Reed Publishing.
[7]. Schiller LR. Abdominal Pain. American College of Gastroenterology. http://www.acg.gi.org/patients/gihealth/aps.asp. Accessed Oct. 15, 2010.
[8]. Ferri FF. Ferri's Clinical Advisor 2011. Philadelphia, Pa.: Mosby Elsevier; 2009. http://www.mdconsult.com/das/book/body/109418463-2/0/1701/0.html. Accessed Oct. 15, 2010.
[9]. Parente F, Cernuschi M, Antinori S, et al. Severe abdominal pain in patients with AIDS: frequency, clinical aspects, causes, and outcome. Scand J Gastroenterol 1994; 29:511.
[10]. Spencer SP, Power N; The acute abdomen in the immune compromised host. Cancer Imaging. 2008 Apr 22;8:93-101.
[11]. McCoy HE 3rd, Kitchens CS. Small bowel hematoma in a hemophiliac as a cause of pseudoappendicitis: diagnosis by CT imaging. Am J Hematol 1991; 38:138.
[12]. Baumgartner F, Klein S. The presentation and management of the acute abdomen in the patient with sickle-cell anemia. Am Surg 1989; 55:660.
[13]. Whitehead WE, Holtkotter B, Enck P, et al. Tolerance for rectosigmoid distention in irritable bowel syndrome. Gastroenterology 1990; 98:1187.
[14]. chapman Wp, Herrera R, Jones Cm. A comparison of pain produced experimentally in lower esophagus, common bile duct, and upper small intestine with pain experienced by patients with diseases of biliary tract and pancreas. Surg Gynecol Obstet 1949; 89:573.
[15]. Bloomfield Al, Polland Ws. Experimental Referred Pain From The Gastro-Intestinal Tract. Part Ii. Stomach, Duodenum And Colon. J Clin Invest 1931; 10:453.
[16]. Saik RP, Greenburg AG, Farris JM, Peskin GW. Spectrum of cholangitis. Am J Surg 1975; 130:143.
[17]. Go VL, Everhart JE. Pancreatitis. In: Digestive diseases in the United States: Epidemiology and impact, Everhart JE (Ed), National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases. US Government Printing Office, Washington, DC 1994. p.693.
[18]. Talley NJ, Colin-Jones D, Koch KL, et al. Functional dyspepsia: A classification with guidelines for diagnosis and management. Gastroenterol Int 1992; 4:145.
[19]. Talley NJ, Phillips SF. Non-ulcer dyspepsia:potential causes and pathophysiology.Ann Intern Med. 1988;108:865–879.
[20]. Stein M, Rappaport L, Frazier C, Zeltzer L.Challenging case: recurrent abdominal pain. J Develop Behav Pediatr. 1995;16:277–281.
[21]. Stoker J, van Randen A, Lameris W, et al; Imaging patients with acute abdominal pain. Radiology. 2009 Oct;253(1):31-46.
[22]. Lameris W, van Randen A, van Es HW, et al; Imaging strategies for detection of urgent conditions in patients with acute BMJ. 2009 Jun 26;338:b2431. doi: 10.1136/bmj.b2431.
[23]. Vandermeer FQ, Wong-You-Cheong JJ; Imaging of acute pelvic pain. Clin Obstet Gynecol. 2009 Mar;52(1):2-20.
[24]. Madill JJ, Mullen NB, Harrison BP; Ovarian hyperstimulation syndrome: a potentially fatal complication of early J Emerg Med. 2008 Oct;35(3):283-6. Epub 2008 Apr 10.
[25]. Korn AP, Hessol NA, Padian NS, et al. Risk factors for plasma cell endometritis among women with cervical Neisseria gonorrhoeae, cervical Chlamydia trachomatis, or bacterial vaginosis. Am J Obstet Gynecol 1998; 178:987.
[26]. Jacobson L, Weström L. Objectivized diagnosis of acute pelvic inflammatory disease. Diagnostic and prognostic value of routine laparoscopy. Am J Obstet Gynecol 1969; 105:1088.
[27]. Ectopic pregnancy, Clinical Knowledge Summaries (February 2010)
[28]. Rucker CM, Menias CO, Bhalla S; Mimics of renal colic: alternative diagnoses at unenhanced helical CT. Radiographics. 2004 Oct;24 Suppl 1:S11-28; discussion S28-33.

[29]. Ansari P; Acute abdominal pain, updated Sep 2007. In: Merck Manuals online.
[30]. Greenberger NJ; Chronic and recurrent abdominal pain, updated Mar 2008. In: Merck Manuals online.
[31]. Cartwright SL, Knudson MP; Evaluation of acute abdominal pain in adults. Am Fam Physician. 2008 Apr 1;77(7):971-8.
[32]. Bugliosi TF, Meloy TD, Vukov LF. Acute abdominal pain in the elderly. Ann Emerg Med 1990; 19:1383.
[33]. Lyon C, Clark DC. Diagnosis of acute abdominal pain in older patients. Am Fam Physician 2006; 74:1537.
[34]. de Dombal FT. Acute abdominal pain in the elderly. J Clin Gastroenterol 1994; 19:331.
[35]. Boyle JT. Abdominal pain. In: Walker WA,Durie PR, Hamilton JR, Walker-Smith JA, Watkins JB, eds. Pediatric Gastrointestinal Disease: Pathophysiology-
[36]. DiagnosisManagement. 2nd ed. St. Louis, Mo:Mosby-Yearbook; 1996:205–227
[37]. Eling MJ, Benninga MA; Chronic abdominal pain in children. BMJ. 2007 May 12;334(7601):997-1002.
[38]. Dimeo FC, Peters J, Guderian H; Abdominal pain in long distance runners: case report and analysis of the literature. Br J Sports Med. 2004 Oct;38(5):E24.
[39]. Richard F.LeBlond. *Diagnostics* (in English). US: McGraw-Hill Companies, Inc. ISBN 0-07-140923-8.
[40]. Macari M, Hines J, Balthazar E, Megibow A. Mesenteric adenitis: CT diagnosis of primary versus secondary causes, incidence, and clinical significance in pediatric and adult patients. AJR Am J Roentgenol 2002; 178:853.
[41]. Cervero F. Neurophysiology of gastrointestinal pain. Baillieres Clin Gastroenterol 1988; 2:183.
[42]. Dworken Hj, Biel Fj, Machella Te. Supradiaphragmatic reference of pain from the colon. Gastroenterology 1952; 22:222.
[43]. Purcell TB. Nonsurgical and extraperitoneal causes of abdominal pain. Emerg Med Clin North Am 1989; 7:721.
[44]. Selzer M, Spencer WA. Interactions between visceral and cutaneous afferents in the spinal cord: reciprocal primary afferent fiber depolarization. Brain Res 1969; 14:349.
[45]. Scott EM, Scott BB. Painful rib syndrome--a review of 76 cases. Gut 1993; 34:1006.
[46]. Ozdemir S, Gulpinar K, Leventoglu S, et al. Torsion of the primary epiploic appendagitis: a case series and review of the literature. Am J Surg 2010; 199:453.
[47]. Lynn RB, Friedman LS. Irritable bowel syndrome. N Engl J Med. 1993;329:1940–1945.
[48]. Gonda TA, Khan SU, Cheng J, et al. Association of intussusception and celiac disease in adults. Dig Dis Sci 2010; 55:2899.
[49]. Fischer MG, Farkas AM. Diverticulitis of the cecum and ascending colon. Dis Colon Rectum 1984; 27:454.
[50]. Ngoi SS, Chia J, Goh MY, et al. Surgical management of right colon diverticulitis. Dis Colon Rectum 1992; 35:799.
[51]. Rodkey GV, Welch CE. Changing patterns in the surgical treatment of diverticular disease. Ann Surg 1984; 200:466.
[52]. Schneider TA, Longo WE, Ure T, Vernava AM 3rd. Mesenteric ischemia. Acute arterial syndromes. Dis Colon Rectum 1994; 37:1163.
[53]. Mock JN, Orsay EM. Primary mesenteric venous thrombosis: an unusual cause of abdominal pain in a young, healthy woman. Ann Emerg Med 1994; 23:352.
[54]. Karim A, Ahmed S, Rossoff LJ, et al. Fulminant ischaemic colitis with atypical clinical features complicating sickle cell disease. Postgrad Med J 2002; 78:370.
[55]. Drossman DA, Morris CB, Edwards H, et al. Diagnosis, characterization, and 3-month outcome after detoxification of 39 patients with narcotic bowel syndrome. Am J Gastroenterol 2012; 107:1426.
[56]. Nores M, Phillips EH, Morgenstern L, Hiatt JR. The clinical spectrum of splenic infarction. Am Surg 1998; 64:182.
[57]. d'Onofrio F, Cologno D, Buzzi MG, et al. Adult abdominal migraine: a new syndrome or sporadic feature of migraine headache? A case report. Eur J Neurol 2006; 13:85.
[58]. Klein NC, Hargrove RL, Sleisenger MH, Jeffries GH. Eosinophilic gastroenteritis. Medicine (Baltimore) 1970; 49:299.
[59]. Spahn TW, Grosse-Thie W, Mueller MK. Endoscopic visualization of angiotensin-converting enzyme inhibitor-induced small bowel angioedema as a cause of relapsing abdominal pain using double-balloon enteroscopy. Dig Dis Sci 2008; 53:1257.
[60]. Patel A, Lall CG, Jennings SG, Sandrasegaran K. Abdominal compartment syndrome. AJR Am J Roentgenol 2007; 189:1037.
[61]. Nicholson JA, Smith D, Diab M, Scott MH. Mesenteric panniculitis in Merseyside: a case series and a review of the literature. Ann R Coll Surg Engl 2010; 92:W31.
[62]. Zighelboim J, Talley NJ. What are functional disorders? Gastroenterology 1993;104:1196–1201
[63]. Boyle, J. T.; Hamel-Lambert, J. (2001). "Biopsychosocial issues in functional abdominal pain". *Pediatr Ann* 30 (1): 32–40.PMID 11195732..
[64]. Pearigen PD. Unusual causes of abdominal pain.Emerg Med Clin North Am 1996; 14:593.