

ENGLISH TITLES

ENGINEERING

Transmission of electric power by six-phase transmission lines

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Abstract

Conventionally, increasing high voltages have been the main technological drive for enhancing the power transfer capability of overhead AC lines. This has brought the transmission of electric power at the UHV level. However, because of the several drawbacks and technological problems associated with such extreme high voltages, research has been underway for the last three decades to investigate transmission of electric power by multiphase systems (employing more than three phases) as a potential alternative to the conventional three-phase systems.

This paper deals with the technical considerations and factors that are likely to motivate the development of multiphase transmission systems. A comparative study is carried out in terms of line characteristics, power transmission, transmission line losses, capacitive and net reactive power, and line loadability for six-phase and three-phase lines. Specific EHV transmission lines are employed to bring out the relative benefits offered by six-phase lines.

Keywords: Transmission System, Electric Power Transfer, 3-phase and 6-phase Lines.

MATHEMATICS

An application of functional analysis: Bifurcation Theory

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Abstract

The subject of functional analysis has become an important tool in the applied mathematical sciences. However, little, if any illustrative of its use has filtered into undergraduate applied mathematics courses including numerical analysis. That is not to say that functional analysis is not mentioned in undergraduate courses. Indeed, most of these courses include vector and metric spaces and so the students are conversant with the idea of a norm and one or two fundamental theorems of functional analysis. This study is a survey of one of the applications of functional analysis to some aspects of bifurcation theory. It deals with the so-called multiple solutions of nonlinear equations.

Key words : Bifurcation , Branching , Linearization, Branch Point , Liapunov-Schmidt

MEDICINE

A study on rupture of gravid uterus in Al-Wahdah Teaching Hospital Aden: 2002-2006

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Abstract

Uterine rupture is a deadly obstetrical emergency endangering the life of both mother and fetus. The aim of this descriptive study was to determine the frequency of ruptured uterus at Al-Wahda Teaching Hospital, Aden, to elicit possible causes, and to determine fetal and maternal outcome of ruptured uterus. We analyzed the computerized data of all cases ($n = 89$) of uterine rupture that arrived to or occurred at the hospital between January 2002 and December 2006. The incidence rate of uterine rupture was 0.44% (one in 226 deliveries). The most common age group was from 35–39 years 40.5% (36/89), followed by the 25–29 years age group 28.1% (25/89). The majority (71.9%) (64/89) were cases from rural areas and 70.8% (63/89) of patients have no antenatal care. Previous scar was the most common cause of uterine rupture (40.5%), obstructed labor 34.8% and misused of oxytocin 18%. Maternal mortality was 7.9% and perinatal mortality 68.5%.

We conclude that lack of antenatal care and poor provision of health service are the main factors contributing to uterine rupture. The improvements of antenatal care, intranatal care, and medical improvements will significantly reduce the incidence of uterine rupture, reduce the perinatal loss and improve survival in mothers

Key words: Ruptured uterus, incidence, cause, outcome, Aden

A study on abdominal hysterectomy in Al- Wahdah Teaching Hospital-Aden, July 2002-june 2003

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Abstract

The objectives of this descriptive and prospective study is to analyze abdominal hysterectomy regarding frequency, age and parity of patients, indications and outcome of the operation. Data were collected for 119 patients in pre-designed written questionnaire which was completed by interview with patients using patient's charts of admission, notes of operation theatre, anesthesia notes and post-operative follow up for the patients

During the study period from 1st July 2002 to 30th June 2003, there were 885 major operations ; Caesarean section were done for 535 patients (62.5%), followed by abdominal hysterectomy for 119 case (13.4%).

The highest rate of abdominal hysterectomy are among grandmultipara women (51.2%) and among age group 41 - 50 years old (47.8%).

Indication for abdominal hysterectomy were symptomatic leiomyomas in(22.6 %) of cases followed by obstetric indication (20.1%) , endometrial hyperplasia (17.6 %) and dysfunctional uterine bleeding in(16.8%)

Majority of abdominal hysterectomy cases are total hysterectomy (84.8%) . Bilateral oophorectomy was done in (63%) of cases. Intra-operative bleeding occurred in 22.7%, wound infection in 19.3% and post-operative bleeding in 10.9% and three women (2.5%) died during the period of study; all were maternal death

Abdominal hysterectomy is the second most common major operation, after cesarean section, associated with grandmultiparae and perimenopausal. The most common indications of abdominal hysterectomy are symptomatic leiomyoma and obstetric causes.

The most common complications are intra-operative bleeding and wound infection. Death occur in obstetric cases

Key words: Abdominal hysterectomy, parity, indications, complications

Surgical management of cutaneous squamous cell carcinoma of the head and neck

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Abstract

A retrospective audit was made of histological records and hospital case notes of patients who had cutaneous squamous cell carcinomas excised from the head and neck region at the Maxillofacial Units, Al-Gamhoria Hospital, Aden and Ibn-Khaldoon Hospital, Lahej, Yemen. A total of 60 lesions were excised over a 5-year period between 1999 and 2006. The local recurrence rate was 5% (3/60) and 6 (10%) of the patients presented with developed regional metastases. Of the 60 patients, 57 (95%) were cured. These rates were compared favorably with those of other published series of cutaneous squamous cell carcinoma managed by surgical techniques that did not follow the micrographical technique. Certain characteristics may aid in the prediction of those cancers that may be more aggressive. It is important to evaluate each case in terms of histological grade and site, and to design management plans to deal with each lesion in the most appropriate way.

Key words: Surgical management, Cutaneous Squamous cell carcinoma of the Head and Neck.

Analysis of pre-labor rupture of membranes at term in Al-Wahda Teaching Hospital Aden,2005

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Abstract

The main objective of this study is to describe the pattern of pre-labor rupture of membranes in term pregnancies. About 192 term pregnancies with clear diagnosis for pre-labor rupture of membranes were evaluated. Women without any signs of chorioamnionitis or any obstetric complications were managed expectantly and waited for 24 hours to deliver spontaneously unless there was evidence of fetal or maternal compromise. Labor was induced in those not delivered after 24 hours, using either oxytocin or prostaglandin and depending on the value of the Bishop score at the time of induction.

The incidence of pre-labor rupture of membranes was 3.75%, about 55.7% of pregnant women with PROM delivered vaginally, while another 44.3% delivered by lower segment cesarean section mainly due to fetal distress and cephalopelvic disproportion.

The educational level, socioeconomic status and antenatal care are the most important demographic and socially related factors. Frequent digital

examinations and rupture to delivery interval are the most important medically associated factors.

Key words: PROM, clinical chorioamnionitis, digital examinations

The prevalence of hypertension and associated risk factors among type2 diabetic patients in Aden Governorate, Republic of Yemen

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Abstract

Diabetes mellitus is a health problem worldwide and, together with hypertension, it increases the risk of diabetic complications that affect different body organs. This cross sectional study aims to determine the prevalence of hypertension and other risk factors among type 2 diabetic patients and their relation to gender. The patients enrolled were 460 (260 males and 200 females). Blood pressure $\geq 140/90$ mmHg was considered as hypertension, overweight/obesity was determined by estimating the body mass index (BMI), and the degree of glycemia was estimated by glycosylated haemoglobin (HbA1c). The result shows that hypertension was found in 50.9% and affects both genders nearly equal. Obesity (BMI ≥ 30 kg/ m²) was found more in female than male patients with 27% and 24%, respectively. While overweight (BMI 25-29 kg/m²) is more in males (51.2%) than females (43%). The glycemc state with HbA1c $\geq 7\%$, was found in both genders nearly equal with 88.7%. In conclusion, hypertension affects nearly half of our diabetic patients, whom the majority were uncontrolled in both genders and overweight in nearly half of them. These findings show for the first time, the state of diabetic patients in Aden and the increase of risk factors that gives an important data for future studies urge the need for health education and improvement in health care for them.

Key words: Diabetes mellitus, Hypertension, Obesity, Overweight, glycemia

The prevalence of cataract among patients in Ibn–Sina Central Teaching Hospital, AL Mukalla, Hadhramout, Republic of Yemen

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Abstract

The target of this study is to determine the prevalence of cataract among attended patients to the Eye Clinic at Ibn–Sina Central Teaching Hospital (ISCTH)-Al Mukalla, Hadhramout to assess the surgical intervention undertaken.

A prospective study was conducted in the Eye Clinic at Ibn–Sina Central Teaching Hospital (ISCTH)-Al Mukalla, Hadhramout from January-December 2000. Data was reported in a special form designed for this purpose, which

includes, among others basic demographic data of the patient, clinical diagnosis and other related information. Diagnosis was established based on visual acuity, slit lamp examination of the anterior segment with non-dilated pupil, intra-ocular pressure maintained, then slit lamp examination with dilated pupil, and lastly by use of direct ophthalmoscope. Statistical analysis was used to determine the prevalence of the problem.

Our study revealed that, out of 3296 patients who attended the Eye Clinic, 173 cases (5.2%) were admitted for lens cataract extraction. The most common age group affected by cataract was between 51-60 years (47%). However, the frequency of cataract among sex was approximately equal.

Low cataract surgical rate (CSR) in Ibn-Sina Central Teaching Hospital specially, and other Hadhramout Eye Clinic, in general, was far to meet the VISION 2020 targets. Around half of the operated patients were at younger age, compared with the international reports, but no gender differences. To strengthening the national blindness, a preventive programme is of paramount importance at the primary health services level and public hospitals through a good provision of instruments, training, and adequate organization of services accompanied by health education programme, using mass media, mosques, social and political leaders for preventive blindness in their districts and governorates.

Key words: Cataract, Ibn-Sina Hospital, Hadramout, Yemen.

Fine needle aspiration cytology in breast lesions: six years experience

Iman Rashid Ali Al-Hariri

Fine needle aspiration cytology in breast lesions: Six years experience

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Abstract

The value of fine needle aspiration cytology (FNA) is significantly required for an accurate pre operative diagnosis (8) of breast disease by distinguishing between benign and malignant breast diseases. At the moment, we don't have the facilities for an intraoperative frozen section diagnosis. The procedure of fine needle aspiration cytology (FNA) for breast disease, a feasible and cheap method with an immediate result, can be obtained in few minutes (3). In this study, the assessment of a positive correlation between fine needle aspiration cytology of breast disease and the result obtained by excisional biopsy (2,8) has been used. This system may be of prognostic value in the early detection of breast cancer (5,9,10) .

Key words: Fine needle aspiration cytology. Breast disease. Benign. Malignant.

PARASITOLOGY

Heavy infection of a Teleost Fish (*Coryphaena hippurus*) by two Tentacularidae larvae (*Tentacularia coryphaenae* and *Nybelinia sp.*)

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Abstract

In this survey, the prevalence of infection in the teleostomian dolphin-fish , *Coryphaena hippurus* by Tentacularidae larvae was 14.63 % . Out of 123 examined fishes, 17 were infected by larvae of *Tentacularia coryphaenae*, while one fish was found heavily infected by two larvae of cestode parasites belonging to the order Trypanorhyncha : *Tentacularia coryphaenae* and *Nybelinia sp.* . The majority of these larvae were found in the stomach wall , few were found scattered in the belly wall and different viscera . Although this fish was heavily infested with these two larvae, it seems to be in a normal morphological state .

Key words : Trypanorhyncha, Tentacularidae, Coryphaena hippurus .

PHYSICS

A study of gamma ray dose buildup factor for different materials

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Abstract

The dose gamma ray buildup factor for different materials (Al, Cu and Pb) has been studied using computer programs constructed to calculate this factor using Berger's formula for point isotropic source . The programs have been designed to work with any atomic number and energy by adapting Lagrange interpolation method according to the studied factors (thickness of the shielding, energy of the radioactivity source and atomic number of the shield) .

Key words: Gamma rays, Berger's formula, Lagrange interpolation method.

Temperature dependence of the energy gap of Cadmium Stannate (Cd₂SnO₄) films

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Abstract

The temperature dependence of the energy gap of Cadmium Stannate films has been studied. The reflectance factor of the film was determined as a function of photon energy to make it possible to determine the energy gap from the allowed transitions for different temperatures. Temperature dependence of the energy gap was obtained by madding'

Key words: Energy gap, Cadmium Stannate, reflectance, semiconductors

ARABIC TITLES

AGRICULTURAL SCIENCES

Survey and identification of the biotic factors in the date palm environment and its application for designing an IPM – program of date palm pests in Iraq

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Abstract

This study depends on IPM-components, which include the survey, identification and categorization of date palm pests according to their importance and the population dynamics of the most important one. Survey of parasites, predators and pathogens inhibited date palm niche. Different control methods and insecticides with special focus on injection techniques, were tested. This investigation, which lasted from 2000 to 2003, reached to the following scientific facts of which most are new for Iraq: 1) langhorne stem borers (LHB) (*Jebuseae hammerschmidtii*), stalk borers (SB) (*Oryctes elegans*) and Dubas bugs (DB) (*Ommatissus lybicus*) were the most destructive and important pests of date palm in the DP cultivation areas in Iraq, 2) new record of entomopathogenic nematodes *Steinernema* sp. were isolated from LHB and tested against 15 different insects. This nematodes were injected into the date palm top by using local mounted machine, 3) identification of 25 mite families which contain 31 genera. The families are three phytophagous 11 predacious, 3 parasitic, 5 fungivorous and 3 saprophytic. The most active mite which belongs to

Diplogynidae was reared and tested against borers in the laboratory' 4) new record of parasitic diptera (*Megasilia* sp.) from the adults of LHB and some biological observation have been done, 5) re-isolation, purification and culturing of *Beauveria bassiana* disappeared since 1980. Testing some cultures and substrates in order to find out the suitable formulation, 6) isolation of two pathogenic viruses from stem and stalk borers, Oryctes-like virus from *Oryctes elegans* and Poxivirid virus from *Jebuseae hammerschmidtii*, 7) determination of the life tables, age-specific fecundity, degree-days (Heat units), and population dynamics of Dubas bugs and Ghobar mite (*Oligonychus afrasiaticus*), 8) survey of parasites, predators and pathogens of Dubas bugs and Ghobar mites, and 9) evaluation of different control methods for date palm pests and designing a new drilling-injecting apparatus suitable for date palm orchards.

Keywords: Date palm pests, Integrated pest management, Iraq

BIOLOGY

Study of resistance of *Proteus mirabilis* isolates, causing urinary tract infections, against some antimicrobial agents

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Abstract

Thirty one *Proteus mirabilis* isolates were obtained from patients infected with UTIs according to the results of biochemical tests. Antimicrobial agent susceptibility test were done for the isolates against (12) antimicrobial agents. These isolates revealed that high percentage of resistance against ampicillin and amoxicillin , wherein the percentage of resistance for both antibiotics were (97%), also the results of the study showed that the percentage of the resistance of bacterial isolates for piperacillin, carbenicillin, and tetracycline was equilibrium (71%). While the ciprofloxacin was the antimicrobial agent which has high activity towards these isolates, wherein its percentage of resistance was (15%) among isolates.

The results of detection of β -lactamase enzymes revealed that 17 bacterial isolates (54.8%) gave positive results for this test, while only one isolate gave positive result for test of detection of extended-spectrum β -lactamases (ESBLs).

The study of plasmid profile which done by agarose gel electrophoresis revealed that 19 isolates possess plasmid bands, but the electrophoresis results showed that there was a difference in their plasmid contents. The results of bacterial conjugation processes that were performed for (19) isolates showed that the possession of these isolates to plasmid bands, and the conjugation process have succeeded in 9 isolates, as well as the higher percentage to transfer genes that encoded to multiple- drug resistance was the resistance of isolates to 6 (66%) antimicrobials, 3 (33%) antimicrobials, and 2 (22%) antimicrobials, respectively.

Key words: UTIs , *Proteus mirabilis* , Plasmid bands.

ENVIRONMENT

Biodiversity of microorganisms in the valley of Warazan-Taiz(Yemen)

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Abstract

This study aims to document the Microorganism in the Valley of Warazan in Taiz Governorate (Yemen). Samples of water were collected from the valley during the period May 2005 to May2007; nine groups have been observed and videotaped. These groups are Cyanophyta, Chlorophyta, Bacillariophyta, Euglenozoa, Sarcodina. Ciliophora, Rotifera, Arthropoda and Nematoda.

Key words: Biodiversity, Microorganism, WadiWarazan, Taiz.

Investigating the distribution of Algae in Al-Hota Wastewater Plant, Lahej Gov.,Yemen

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Abstract

The aim of this study is to identify and determine the diversity of algae in Al-Hota wastewater Plant in Lahej Gov.,Yemen. The results have shown that there were 27 identified Algae Taxa; 11 are green (Chloropyta), 6 blue-green(Cyanophyta), 4 motilegreen algae (Euglenophyta), and 6 Diatoms (Bacillariophyta). Blue-green Algae reported as being more predominant group in the effluent of anaerobic pond. Green Algae represent the most abundant group always present in good number during the investigation period. A good diversity of Diatoms was present in the effluent of aerobic pond. Physicochemical analysis of anaerobic and aerobic ponds effluent reveals that the temperatures ranged from 28.75 to 28.84 c and the concentration of hydrogen ion from 7.1 to 7.7 , dissolved oxygen from 0.02 to 1.42 mg/l ,total dissolved solids from 1933.75 to 2014.4mg/l , electric conductivity from 3170 to 3198.75 us/cm, colour from trouble to and the total count of Algae was 2.20×10^3 /ml and 7.92×10^5 /ml greenish

in the effluents of anaerobic and aerobic ponds, respectively.

Key words: Algae, wastewater, Lahej .

**Survey and ecological study on the flora of Caldera escarpment,
Jabal Shamsan, Aden, Yemen**

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Abstract

Different survey ecological studies of natural flora and plant cover seem very important. Such studies ,in fact, lead to knowing the way in which its qualitative content exists whatever its distance and its relationship with different ecological factors surrounded or human influence .

This exclusive survey study on the flora of Caldera Escarpment area at Crater –Aden Governorate has perfectly been done, ,which we think that it is very important at the present time because it has not completely been studied during the last twenty years . It actually resembles a natural and partial model of the dry ecological area in Aden, including a group of little Aden peninsula .

The survey study was practically achieved in 12 places, on the escarpment area level and, as a result, 77 plant species were recorded belonging to 53 plant genera, following 26 families .

Keywords: Survey study, ecological factors, flora of Caldera Escarpment .

**Determination of fallen dust particles on Al-Sheher and Mukalla
cities in Yemen**

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Abstract

The aim of this research study is to determine the quantity of fallen dust particles upon Mukalla and Al-Sheher cities in Hadramout, Yemen. The fallen dust particles were collected by dust particle collector. The results obtained from December 2003 to April 2004 show that the quantity of fallen dust particles in Mukalla varies from one region to another ,with an overall fallen dust particles average of 0.0398 Ton/Km² /Month, reaching higher average of 0.0463 Ton/Km² /Month in Fowa region, and lower average of 0.0270 Ton/Km² /Month. in Al-Shaheed region. The results also show that the quantity of fallen dust particles in Al-Sheher also varies from one region to another, with an overall fallen dust particles average of 0.01617 Ton/Km²/Month, reaching the higher average of 0.01892 Ton/Km² /Month in AL-Mahdar region, and the lower average of 0.01316 Ton/Km² /Month in Libia region. These results are very low, compared with some similar studies about certain Arab cities such as Al Riyadh in Saudi Arabia and Cairo in Egypt. This could be attributed to the

geographical location of the cities, as well as their economical situations and activities .

Keywords: Fallen dust, Mukalla, Al-sheher, Yemen.

MARINE SCIENCES

Carangidae catches in the coastal waters of Al-Mahra Governorate, Yemen

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****Marine Science & Resources Research Center / Aden
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Abstract

This paper defines the important commercial species of Carangidae, the catch quantity in the coastline of Al-Mahra Governorate, species composition, important fishing methods, fishing season, and boat production per day of deferent species. The catch quantity of these species represents 0.52 % of the total catch of other fish families. The highest catch of Carangidae was during April and February 2004, and the lowest catch was during August, July and June 2004. Black Trevally, occupied the highest catch among these species.

Key wards: Catch, Carangidae, Al-Mahra Governorate.

Shark and ray catches in the coastal waters of Al-Mahra Governorate, Yemen

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Abstract

This paper describes the important species of sharks and rays caught by the traditional fishery in Al-Mahra Governorate during October 2003 – Sept. 2004, the catch of different species, the boat production per day, and fishing methods. The catch quantity of sharks and rays reached 5314086 kg which represent the percentage of 5.18 % of the total catch of fish in the governorate. The highest catch was in April 2004. The important species of shark was Milk shark, where the catch represents 87.22 % of the total catch of these species during the season, and the highest catch of this species was in April, representing

67.06 % of the total catch of this species during the season. The important species of rays was Spotted eagle. The important fishery of sharks and rays was in the coastal areas of Sayhot, Mahyfeef and Qishin. The highest production of boat per day during the season 2003 – 2004 for the species of Milk shark reached 274.9 kg / boat / day. The important fishing methods used for sharks and rays, was gill nets.

Key words: - Catch , sharks and rays, Al-Mahra Governorate.