

Management of Genital Lesions in Women's Health Using Electronic Photography Transfer Consultation

**Satellite Conference and Live Webcast
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Video Communications and Distance Learning Division**

Faculty

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Purpose

- **The purpose of this information is to provide an overview and details on the methods used to photograph and electronically transfer images of unusual gynecological lesions for remote consultation with experts**

Objectives

- **Define telemedicine**
- **Identify the 2 major types of electronic photography transfer methods (telemedicine applications) used for expert consultation**
- **State 3 different uses of clinical photography**

Objectives

- **Describe methods to individualize photography protocol development**
- **Identify advantages and disadvantages of electronic photography transfer consultation**
- **Review case studies of genital lesions amenable to photography transfer consultation**

Introduction

- **Photography is prevalent in dermatology, wound care, educational services, others**
- **Electronic photography transfer allows innovative care delivery**
- **Is a telemedicine application**

Introduction

- **Allows for collaboration and consultation with experts, education and documentation measures**
- **More efficient and effective management of client's needs**
- **Easy use for remote/underserved communities**
- **Appropriate due to increased utilization of telemedicine processes**

What Is Telemedicine?

- **Telemedicine is the ability to deliver care to individuals separated by distance from their providers (Roine et. al, 2001)**
 - **Teledermatology**
 - **Telegynecology/telecolposcopy**
 - **Teleradiology**

What Is Telemedicine?

- **Teleophthalmology**
- **Telewound**
- **Telestroke**
- **Telepsychiatry**

Types of Electronic Photography Transfer

- **Videoconferencing (real-time)**
 - **Gold standard**
 - **Uses audio-visual methods**
 - **Direct, dual interaction**
 - **Similar to face-to-face**

Types of Electronic Photography Transfer

- **54 - 80% diagnostic accuracy**
- **Compared to in-person**

– Kanthraj et al., 2007

Types of Electronic Photography Transfer

- **Store-and-forward (SAF)**
 - **Digital camera**
 - **Cellular phones**
 - **Personal digital assistants (PDA)**
 - **Facsimile**
 - **Templates**

Preferred Delivery Methods

- Mohr et al. (2010) - 148 responses
 - 54% hard copy photographs
 - 50% encrypted e-mail
 - 21% secure websites
 - 10% CDs
 - Inclusion in electronic medical records (EMR)

Forwarding Data

- Internet
- Wi-Fi
- Satellite communication

– Kanthraj, et al., 2007

Advantages/Disadvantages of Telemedicine

- Advantages
 - Remote care delivery
 - Time saving
 - Through reduced clinic visits, travel expenses, costs

Advantages/Disadvantages of Telemedicine

- Ease of access
 - Substandard specialist care
- Point of entry into system
 - Home, outpatient

Advantages/Disadvantages of Telemedicine

- Disadvantages
 - Limited history, tactile stimulation, potential privacy issues
 - Limited assessment capabilities - nonverbal cues, vocal tones, physical demeanor
 - Regulatory/reimbursement issues, policy/protocols

HIPAA/Legalities

- Health Insurance Portability and Accountability Act of 1996
 - Protection of individual health information
 - Covered - health plans, health information regardless of format
 - Electronic, paper, oral

HIPAA/Legalities

- Specific issues for telemedicine - privacy (videoconference), State preemption of Federal laws
- Teleconsulting across state lines
 - Which state privacy laws apply
- Certification, practice of medicine
- Health Resources and Services Administration. (2001). Final HIPAA privacy rules. Retrieved from <http://www.hrsa.gov/telehealth/pubs/hippa.htm>

Reimbursement Issues

- Medicare
 - Partial reimbursement
 - Most telemedicine reimbursement
 - Eliminated fee sharing
 - Includes direct care, consultation, office psychiatry
 - Expectation to expand to rural and underserved areas

Reimbursement Issues

- Medicaid
 - 27 states reimbursed for telemedicine
 - Must satisfy requirement of efficiency, economy, quality care
- Private Insurance – CO, HI telemedicine legislation
 - OAT (2003)

Literature Review

- Telemedicine > 10 years old (Brear, 2006)
- Greater than 360 applications in the U. S. (Hersh, et al., 2001)
- Result of physician/specialist shortage, centralization of care facilities (Brear, 2006)

Literature Review

- 52% of referrals by practitioners undertaken using electronic measures (Wooten, 2001)
- Common in underserved areas, elder and veteran care (Hersh et al., 2001)

Literature Review

- Arizona Telemedicine Program (ATP)
 - Multidisciplinary university based program
 - Developed in 1996 for improved access to specialty services
 - Provides telemedicine services, informatics training, distance learning

Literature Review

- 97, 722 telemedicine events since commencement
- 85, 728 teleradiology teleconsults - used most
- Next in frequency - teledermatology and telepsychiatry

Literature Review

- Recurring themes
 - Quality
 - Access
 - Cost/effectiveness
 - Immediate treatment
 - Education
 - Patient/provider satisfaction

Literature Review

- Quality
 - Dermatology
 - Has increased studies evaluating SAF methods

- Hersh, et al., 2006

Literature Review

- Diagnostic agreement with SAF methods using digital camera - 48-89%

- Kanthraj, 2007

Literature Review

- Study
 - Consulting dermatologist using oral descriptions without images compared to those with images
 - Found those with images more reliable

- Mann, et al., 2007

Literature Review

- Telecolposcopy
 - 81 and 82% PPV (positive predictive value) of image review by physicians compared to 80% in-person

- Lopez, et al., 2005

Literature Review

- Study
 - Evaluating technical effect and clinic fit of telecolposcopic system found 86% concordance in referring/reviewing sites

- Harper et al., 2000

Literature Review

- Physician agreement 86% for colposcopy and 66% for colposcopy with histology

- Harper et. al, 2000

Literature Review

- Access
 - Study of teledermatology in remote areas
 - Increased consultations from 1.8 - 9.6% after telemedicine implementation

- Hersh, et al., 2001

Literature Review

- Telehome care through videoconference
 - Easier, immediate healthcare access

- Lopez, et al., 2005

Literature Review

- Cost/effectiveness (compilation of findings from reviews)
 - Video in pediatrics - cost 2/3 that of direct care
 - Telemedicine for incarcerated - result in 95% saved trips, 30% travel expenses

Literature Review

- General hospital consults (video) - 20% decrease cost for out patient care (internal medicine), decrease visits by 67%
- EKG image transfer - 31% decreased cost, 23% avoidable transfers

Literature Review

- SAF teledermatology, elder care –
70 - 90% adequate treatment plan
with history/images or both
- Teleradiology, video for oncology -
treatment plans/outcome
comparable to face-to-face

- Roine, et al., 2001

Literature Review

- Immediate treatment
 - EKG transfer via ambulance
 - Diagnosis 25 minutes prior to
arrival

- Roine, et al., 2001

Literature Review

- Extremity replantation (SAF)
 - Possible replantation
questioned, but image alone
determines is possible

- Buntic, et al., 1997

Literature Review

- Telestroke (videoconferencing)
 - Patient assessment via audio-
visual means, recommendations
made/treatment initiated

- Demaerschalk, et al., 2009

Literature Review

- Education
 - Graduate/postgraduate
 - Continuing health
education/medical education
 - Certifications/recertification
 - Homecare management

- Conde et al., 2010

Literature Review

- Patient/provider satisfaction
 - Result of easy access, decreased
travel and wait times, cost saving
 - 88% satisfaction with
dermatological consultations
 - 98.3% overall satisfaction with
telemedicine care

Literature Review

- 95% prefer telecolposcopy if distance is a factor
- Provider perspective
 - Potential offered by technology

– Whitten, et al., 2005

Interviews with Leaders in Field

- Deborah Davis, Nurse Practitioner, Alabama Department of Public Health
- Ramona Hawkins, Senior Nurse Practitioner, Alabama Department of Public Health

Interviews with Leaders in Field

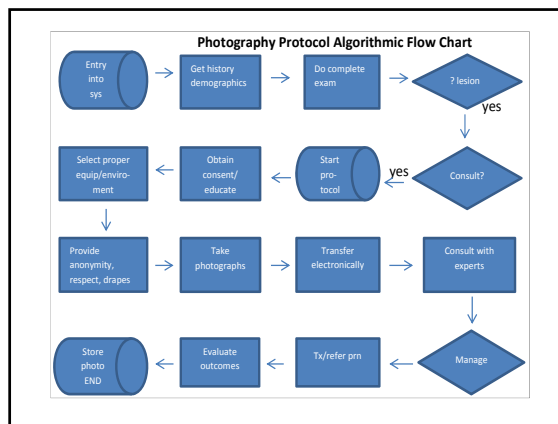
- Dr. Theresa Nkole, General Practitioner/Obstetrics/Gynecology, Zambia University Teaching Hospital
 - Functioning locally for one year on a Cervical Cancer Research Grant

Implementation of Photography Transfer Consultation

- Interventional focus for development is the incorporation of the use of electronic photography transfer consultation into patient care in clinic settings

Implementation of Photography Transfer Consultation

- Those incorporating this type of telemedicine service will promote improved access, cost effective, quality care, immediate treatment, and teaching measures in clinic settings



Review of Protocol Steps

- Entry into system
- Obtain history/demographics
- Perform complete exam
- Questionable lesion
- Consult necessary
- Implement protocol process
 - If yes to last two steps

Review of Protocol Steps

- Obtain consent/educate
- Select proper equipment
 - Basic 35mm digital medical camera
- Select proper environment
- Provide anonymity, respect, proper draping

Review of Protocol Steps

- Take photographs
- Transfer electronically
 - Internet, e-mail, facsimile with proper security
- Consult with experts
- Manage
- Treat/refer

Review of Protocol Steps

- Evaluate outcomes
 - Limited info in literature
- Store photographs
 - Securely but accessible to other professionals
- End process

Illustrative Telegynecology Case Studies

- Imaging provides a multitude of information regarding patients' conditions almost instantaneously
- Store-and-forward methods provide services in areas lacking essential health professionals

– Naylor, 2003

Illustrative Telegynecology Case Studies

- The following actual/hypothetical case studies represent the types of lesions that may be amenable to electronic photography transfer consultation

Case Study 1

- A 25 year old white prostitute presents with a c/o irregular bleeding for last 3 months but unsure if it's from vagina or a sore that she noticed
- She has not sought any treatment
- Her prior history is consistent with drug use, GC, Chlamydia and Syphilis treatment

Case Study 1

- Pt admits to consistent use of condoms for the last year
- Pt is a poor historian
- Image represents findings
- Nancy NP of 3 months examines the patient and finds this lesion
- Per photography transfer, using template consultation determine a possible diagnosis and treatment

Case Study 1



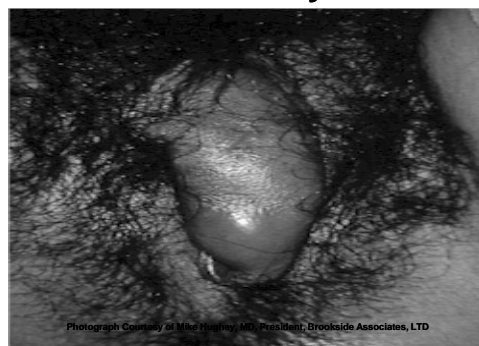
Case Study 2

- A 22 year old black female presents to the rural clinic with a c/o unilateral mass in LU labia for 1 week
- Area is slightly tender, red
- Pt fearful due to mother with history of vulvectomy 6 months ago due to vulvar cancer

Case Study 2

- No significant history but admits to often squeezing "hair bumps"
- Image represents findings
- Rob NP is concerned and decides to consult mom's gyn/oncologist 40 miles away, using SAF methods
- What is the likely diagnosis and treatment plan rendered?

Case Study 2



Case Study 3

- A 50 year old, menopausal, white female presents with a c/o intense itching and a whitish area in the genital area for a few months
- Hx of frequent yeast infections due to diabetes
- She has tried OTC preps with little success

Case Study 3

- Recently resumed intercourse after husband's death 1 year ago but no STD history
- Image represents findings
- Recent graduate Judy NP used consultation through template to confirm her dx/tx plan

Case Study 3



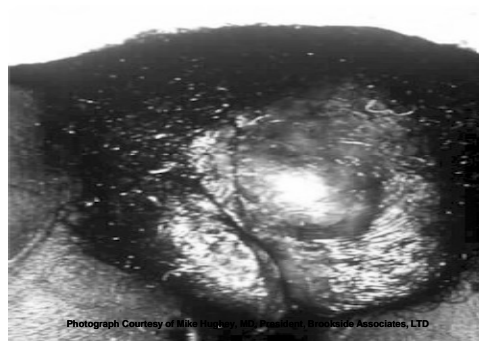
Case Study 4

- A 15 year old, black female presents to STD clinic with unilateral pain and swelling in labia area x 1 day
- Pt denies sexual activity, is a gymnast with recent fall and straddled the bar
- No problems noted at the time

Case Study 4

- Afraid to tell parents due to recently caught "making out" with her boyfriend
- Afraid she has an STD although continues to deny intercourse
- Image represents findings
- SAF methods were used prior to referring pt for evaluation 30 miles away

Case Study 4



Case Study 5

- A 62 year old, postmenopausal, white female presents with c/o itching lump on genitals for 2 months
- She states the lump is wet feeling often and is reddish in color
- States the area burns at times and nothing she does seems to help

Case Study 5

- She has a history of diabetes with frequent yeast infections but states this is different
- After several failed treatment attempts, Johnnie NP decides to consult her physician for guidance using consultation template

Case Study 5



Case Study 6

- A 60 year old with c/o external itching for a few months
- States previously dx with eczema in the area and received questionable treatment
- States the treatment did not work and she is clawing herself terribly
- Image represents findings

Case Study 6

- Linda NP recommended a round of topical steroids after r/o other possible causes such as diabetes or recurrent yeast infection
- Pt returned with symptoms worsening

Case Study 6

- At this point, NP decided to use videoconferencing to speak with a dermatologist
- What are the possible recommendations?

Case Study 6



Case Study 7

- 40 year old, white female into clinic with c/o bumps and recent onset vulvar pain
- Has been seen in ER several times only to be told to see gyn
- No health insurance
- Prior history of treatment of condyloma

Case Study 7

- Abstinence last 3 months
- Image represents findings
- The NP recognizes the patient needs immediate care but unsure if the pt would get scheduled without other intervention
- She proceeds to fax the MD a picture of the lesion for urgent scheduling
- What are MDs likely findings?

Case Study 7



Conclusion

- Telemedicine services such as electronic photography transfer may lead the way to a technological explosion for healthcare delivery
- It has the potential to improve access and provide quality, cost effective healthcare at the point of entry into the system

Conclusion

- Much remains to be done in terms of protocols, rules, regulations, and reimbursement
- With the changing healthcare environment, providers must help lead the way to innovations in delivery of care
- A picture is worth more than a thousand words!!!!

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