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**JOINT ACCOBAMS/ASCOBANS/SPA-RAC WORKSHOP
ON MARINE DEBRIS AND CETACEAN STRANDING**



24th ASCOBANS Advisory Committee -
Vilnius, 25-27 September 2018

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IWC Stranding Expert Panel Chair



**REPORT OF THE JOINT ACCOBAMS/ASCOBANS/ECS/SPA-RAC WORKSHOP
ON MARINE DEBRIS AND CETACEAN STRANDING**



1.1. Stranding events

- Evaluation of the needs for further development of national stranding networks;
- Promotion of establishment of National Stranding Networks under the national coordination/support;
- Promotion of harmonization of stranding protocols (collection, analysis, etc.) in order to exchange common data, as appropriate* ;
- Assessment of existing stranding protocols. Tiered guidelines- simpler as required: What is the *de minimis* approach? *;
- Addition of tiered marine debris collection protocols to updated ACCOBAMS/ASCOBANS strandings protocols;
- Implementation of relevant Capacity building ;
- Promotion/exchange of best practices in addressing cetacean stranding events*;
- Particular focus in areas of known high density of marine debris (e.g. Adriatic);
- *Special focus on stranding data from low densities and/or data deficient species (e.g. Grampus).*

1.2. Data banks

- Collation of existing data- which species, which regions, etc.;
- Inventory of all stranding information available from stranding data banks;
- Promotion of the establishment of regional tissue databank where there are none (e.g. Black Sea area);
- Improvement of communication between tissue data banks and between possible providers. Improvement also of access in both ways, providing and collection;
- Establishment of the minimum set of samples and the proper way of collection for tissue banks.

* See ASCOBANS Resolution 8.10 (2016) and ACCOBAMS Resolution 6.22 (2016)

Necropsies - Improve general results from necropsies

- Investigation of pathogens presence;
- Investigation of contaminant levels released by debris ingestion and by prey ingestion (trophic transfer);
- Establishment of a list of the most important pollutants, pathogens, etc. which should be investigated in order to have a starting base line in common studies;
- Investigation of potential impacts of underwater anthropogenic noise;
- Identification of research groups/labs that may be able to analyse material collected by stranding networks;
- Identification of best practices worldwide;*
- Harmonization of pathology sampling methodologies;*
- Consideration should be given in using categorization of debris resulting from the MedSealitter project;
- Establishment of a common approach in interpreting results from postmortem analyses identifying a common language and code for mechanisms, as well as causes of death.

Data Gaps

- Collection and collation of existing and prospective “negative” data (absence of marine debris) recorded during necropsies;
- Identification and assessment of data banks and new tools/techniques globally;
- Improvement of stranding context by relating to species population distribution and abundance.

Research needs with future proofing

- Aerial surveys / boat surveys (see MedSealitter project): cost/benefits analyses;
- Investigation of relevance of using other animals (marine turtles** and seabirds) protocols for including marine debris data in cetacean stranding monitoring;
- Look into human impacts and initiatives; WHO initiatives, etc.;
- Encourage national/international collaborations.

Policy

- Promotion of relations stranding-marine debris data for advocating conservation policies.

Environmental Pollution 243 (2018) 519–527



Contents lists available at ScienceDirect

Environmental Pollution

journal homepage: www.elsevier.com/locate/envpol



Retrospective study of foreign body-associated pathology in stranded cetaceans, Canary Islands (2000–2015)*

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Highlights

- Foreign bodies were found in 7.7% (36/465) studied cetaceans in the Canary Islands in a 16 year period.
- Severe digestive disease (impactions and gastrointestinal perforations) caused the death of 13 animals (2.8%, 13/465).
- Plastic was the most common item found (80.6%).
- Poor body condition and deep diving behavior were risk factors for foreign body ingestion.
- Adult age was a protective factor for foreign body ingestion.

when possible and, when not, efforts to document the presence of marine debris, both ingested and entangled, should still be put into place; and

- (b) Debris should be characterised by material, size, colour, shape, mass and volume and, where possible, identified to source.
- (c) Develop effective cooperation with the ongoing regional initiatives on marine debris, including ghost nets;
- (d) Assess the impact of plastic materials on cetaceans;
- (e) Discuss requirements for the development of a common approach and joint guidelines.

The sub-committee recommended the organisation of an intersessional workshop on Marine Debris, preferably to coincide with the World Conference on the Biology of Marine Mammals in Barcelona in December, 2019.

The Committee draws attention to the fact that marine debris remains a threat, and that in particular, exposure to plastics (including microplastics) is a rapidly emerging area of concern. It therefore:

RESOLUTION 6.22

CETACEAN LIVE STRANDING

- Necropsies should be routinely carried out according to comparable procedures and approaches for data sharing
- Different situation of the stranding network in different countries
- Consider resources commonly present in each countries
- Support countries without national protocols (procedures, forms and data collection)
- Minimum standard for those countries with an established procedure
- Multilevel

Protocol for basic post-mortem examination: multi-level approach

BASIC:

basic gross examination and data collection

- collection of data on stranding event (date and location coordinates)

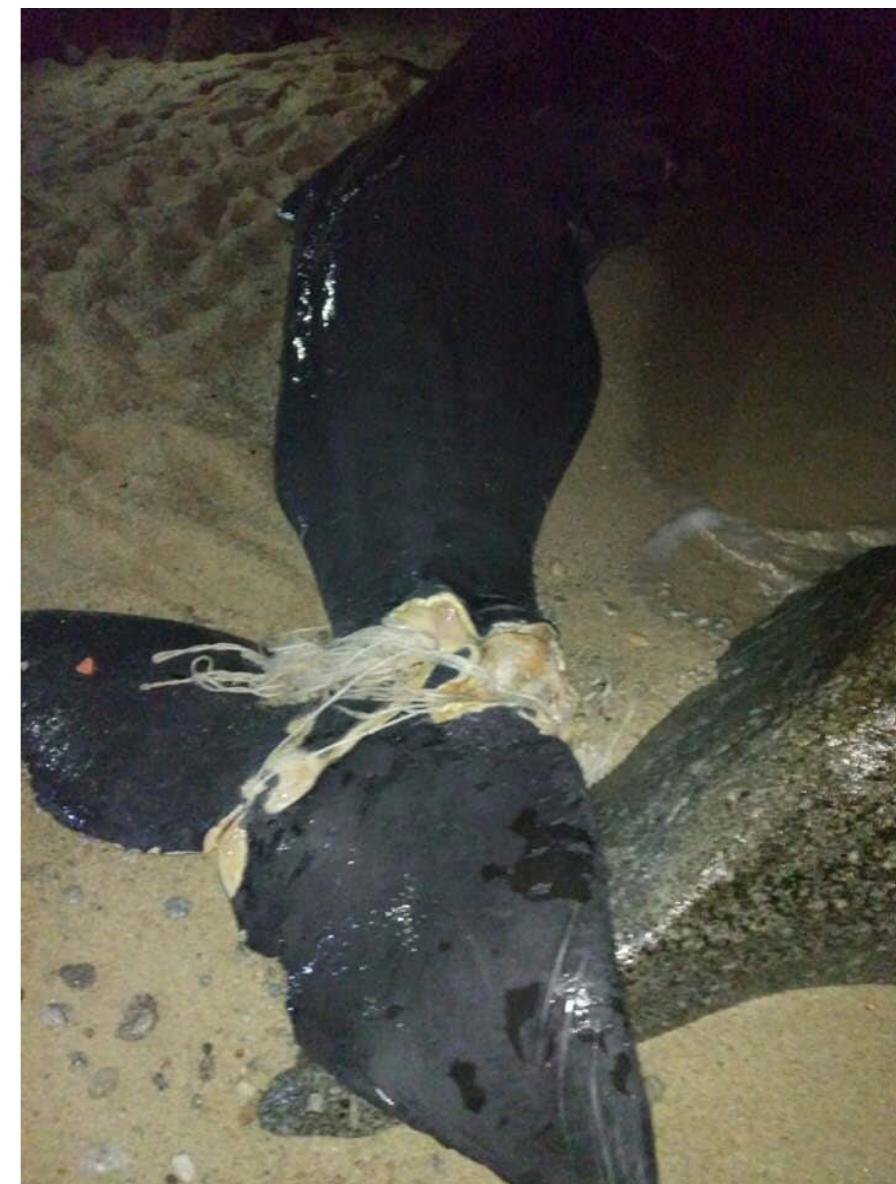
- data on animal involved (species, sex, age class, physiological status)

- measuring the animal

- gross examination with general description of main findings

- possible external signs of human interaction

- external and stomach content examination: presence and quantification of macro-plastic and marine litter (including ghost nets)



Protocol for basic post-mortem examination: multi-level approach

INTERMEDIATE

sampling for general ancillary analyses

- sampling and performing microscopic examination and tissue bank
- sampling and performing microbiology
- sampling and performing toxicology
- sampling and performing life history
- sampling for sound related mortalities
- sampling marine debries for identification and quantification



Protocol for basic post-mortem examination: multi-level approach

ADVANCED

specific postmortem examinations and analyses with specific data and samples collection

- Dolphin morbillivirus
- Human interaction (bycatch, marine debris ship strikes)
- Sound related mortality
- Mass strandings

by-catch: basic

Vol. 103: 229–264, 2013
doi: 10.3384/dao0256i

DISEASES OF AQUATIC ORGANISMS
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Published April 11

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THEME SECTION

Criteria and case definitions for serious injury and death of pinnipeds and cetaceans caused by anthropogenic trauma

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Recent feeding



by-catch: basic (need training)

OPEN ACCESS Freely available online



Compositional Discrimination of Decompression and Decomposition Gas Bubbles in Bycaught Seals and Dolphins

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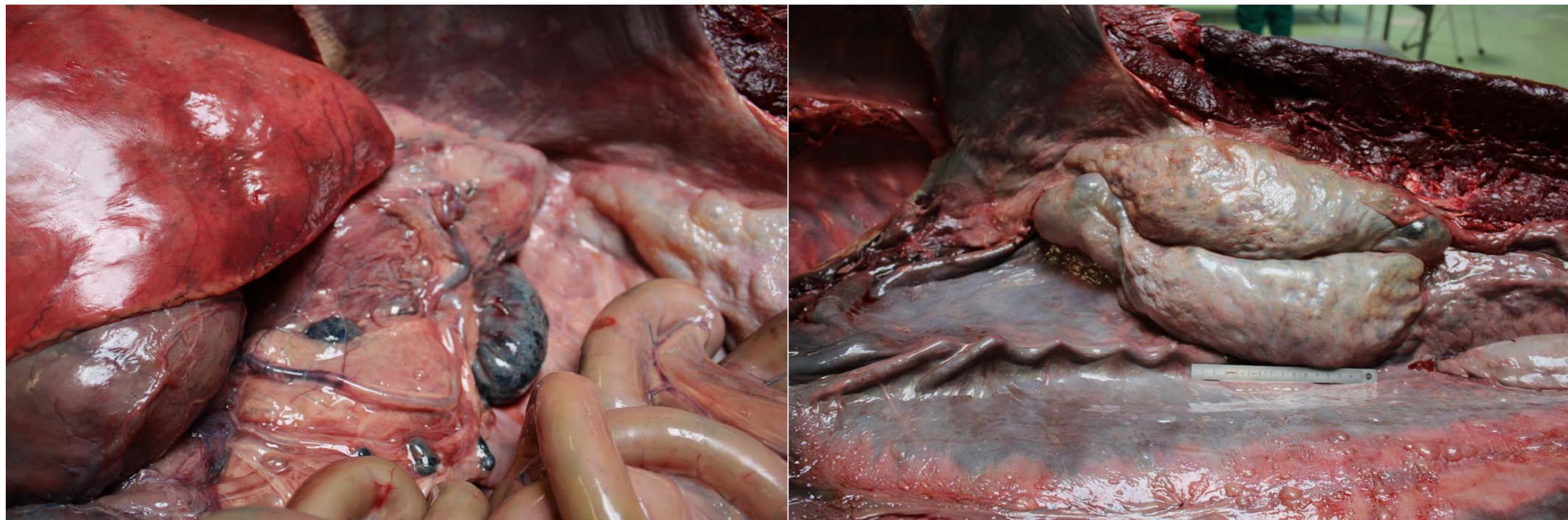
Research in Veterinary Science

journal homepage: www.elsevier.com/locate/rvsc



Differentiation at necropsy between *in vivo* gas embolism and putrefaction using a gas score

Yara Bernaldo de Quirós ^{a,*}, Pedro Saavedra ^b, Andreas Møllerløkken ^c, Alf O. Brubakk ^c, Arve Jørgensen ^{c,d}, Oscar González-Díaz ^e, Jose L Martín-Barrasa ^{f,g}, Antonio Fernández ^a



by-catch: intermediate

Nondomestic, Exotic, Wildlife and Zoo Animals—Original Article

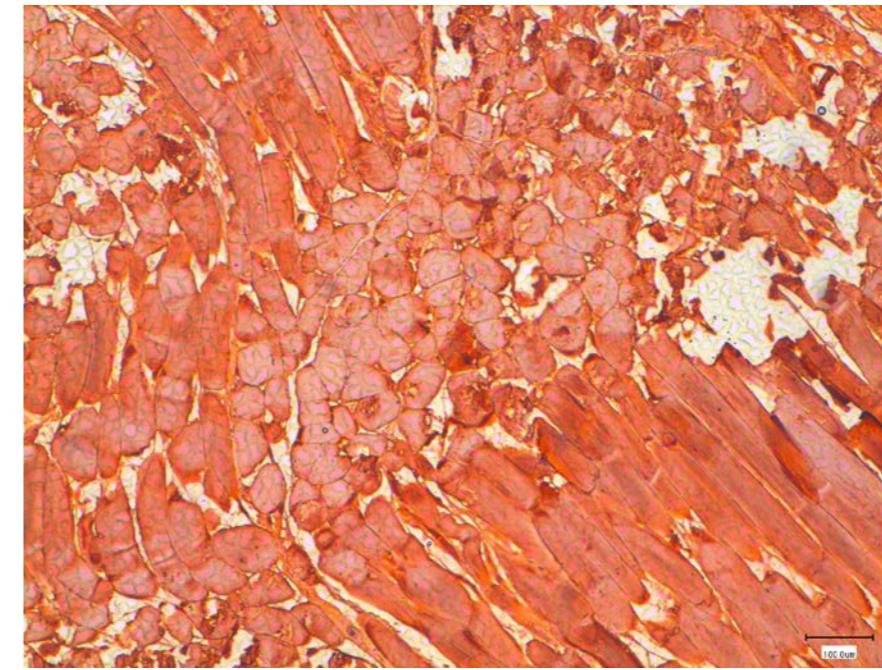
Muscle Pathology in Free-Ranging Stranded Cetaceans

Veterinary Pathology
2017, Vol. 54(2) 298-311
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sagepub.com/journalsPermissions.nav
DOI: 10.1177/030985811660747
jvets.sagepub.com/home/vet

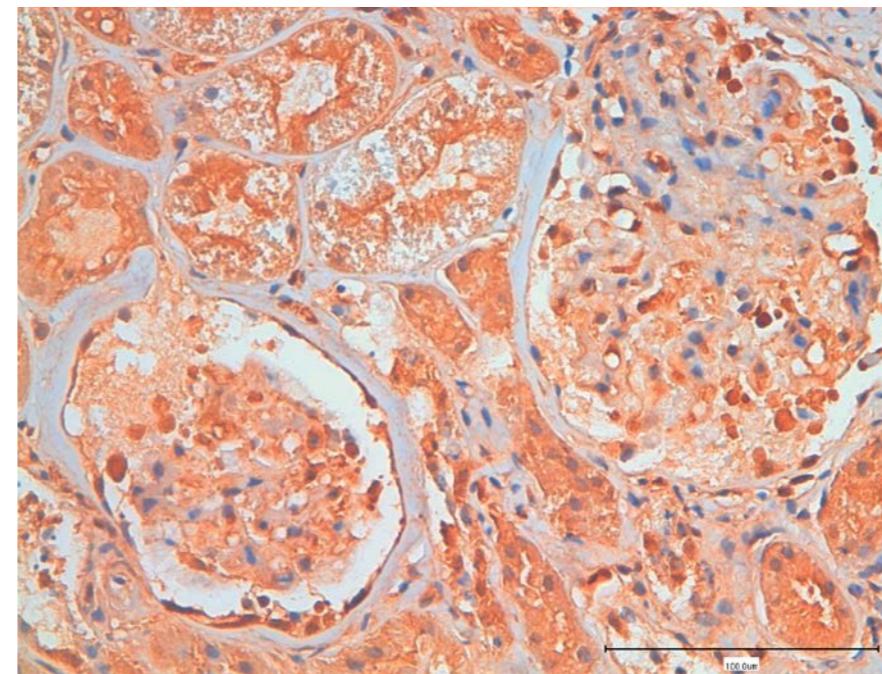
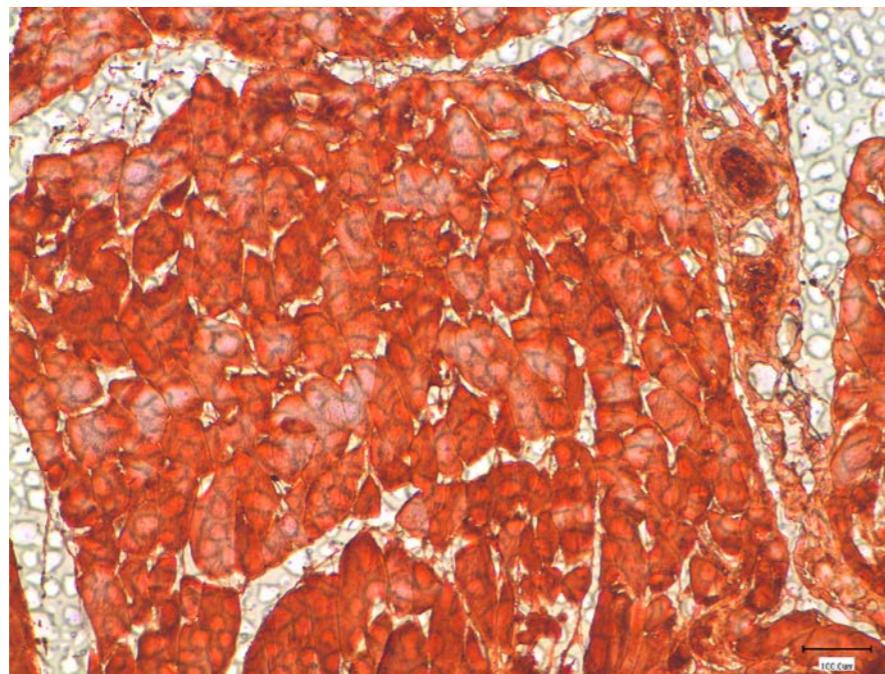


E. Sierra¹, A. Espinosa de los Monteros¹, A. Fernández¹,
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M. A. Sierra², and P. Herráez¹

Capture myopathy due to entanglement

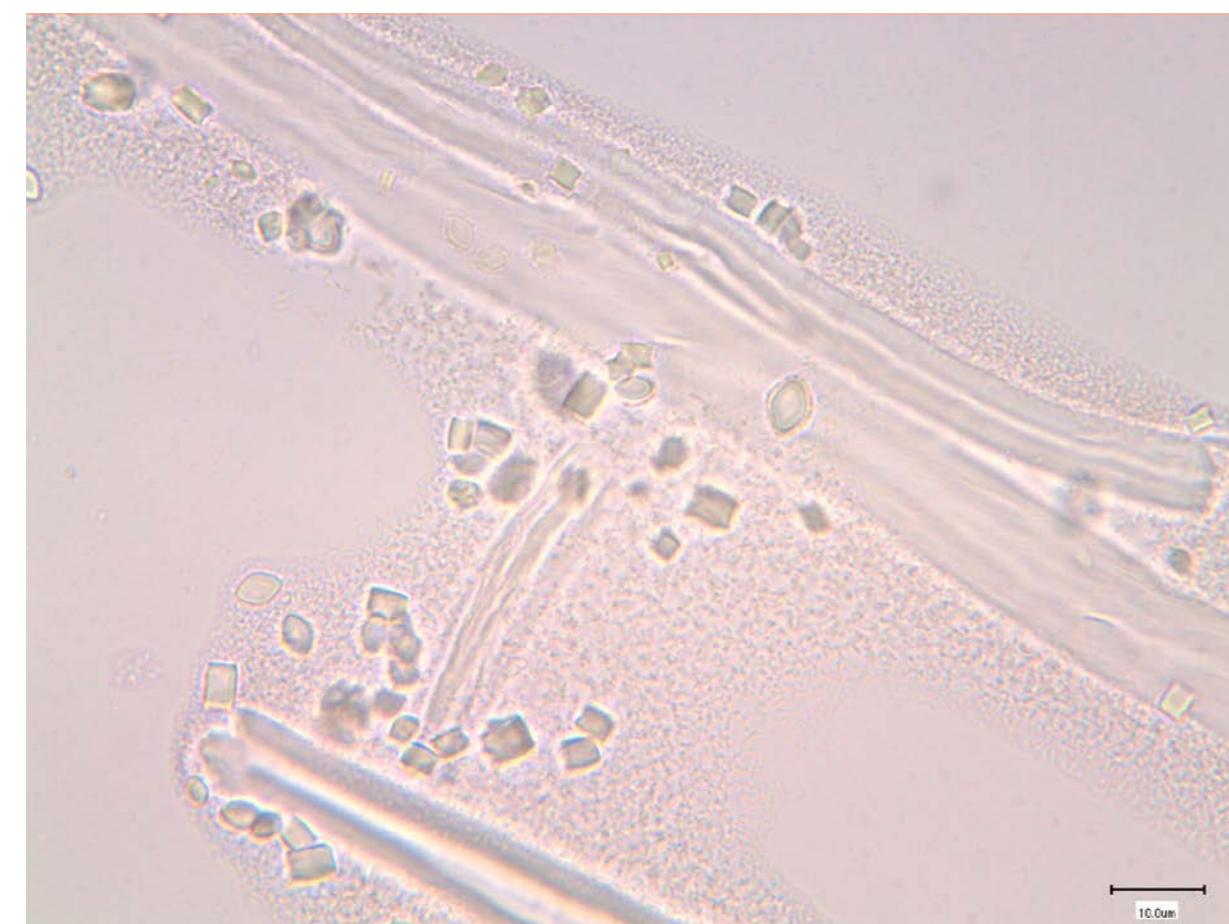
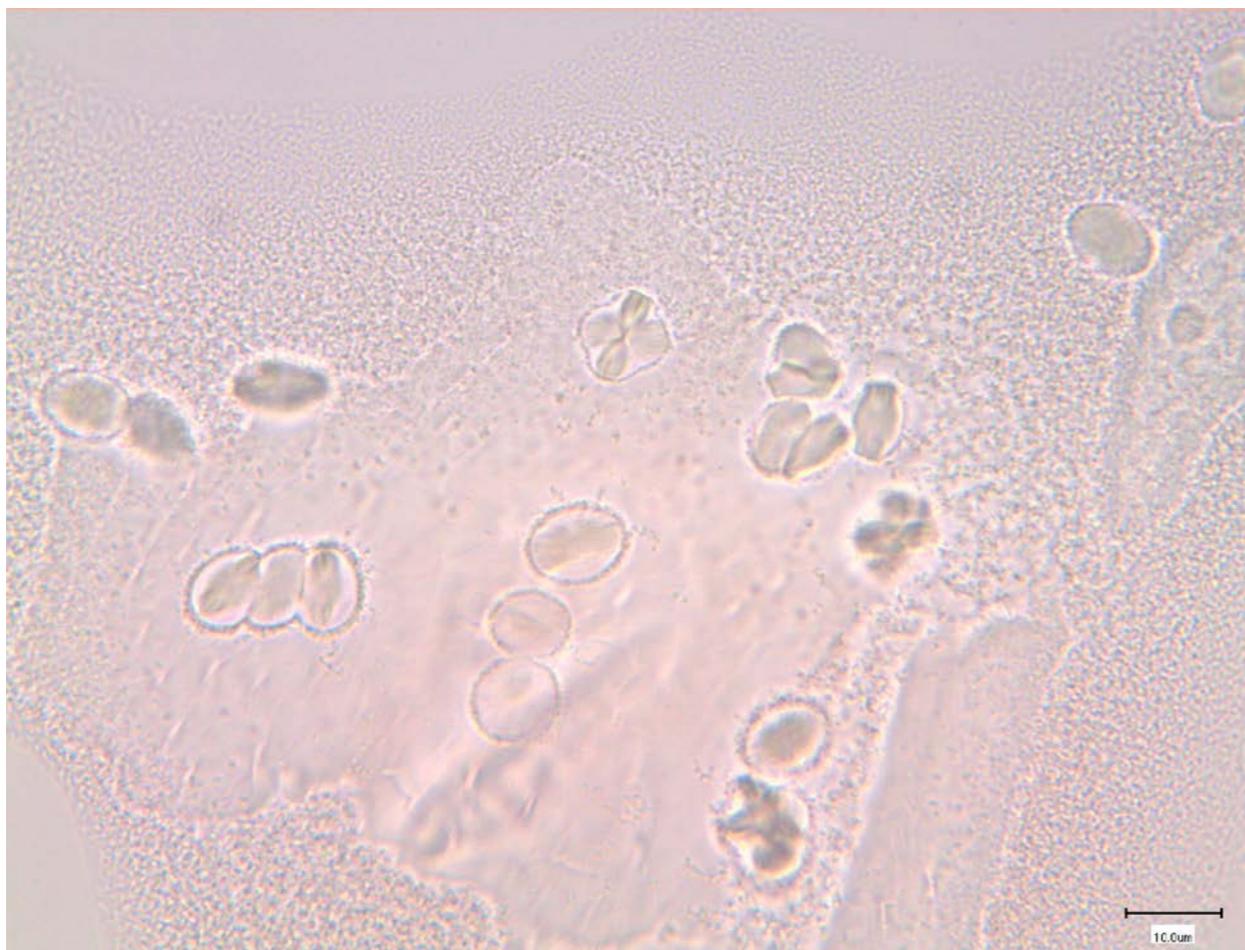


IHC anti-myoglobin



IHC anti-fibrinogen

by-catch: advanced



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Forensic Science International

journal homepage: www.elsevier.com/locate/forsciint



Rapid Communication

The diatoms test in veterinary medicine: A pilot study on cetaceans and sea turtles

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Carla Grattarola^d, Federica Giorda^d, Alessandra Pautasso^d, Stefania Barbieri^e,
Bruno Cozzi^f, Sandro Mazzariol^{f*}, Rosa Maria Gaudio^b



Conclusion

- Protocols vs best practices
- Cooperation for the next steps being inclusive
- Harmonization of existing/in process postmortem protocols (at least in Europe) - simple, minimal and based of evidences
- Definition/Harmonization best practices regarding investigation of specific problems (viral, bycatch, marine debris, etc.)..but we need input to be functional to IWC/ACCOBAMS/ASCOBANS
- ACCOBAMS will proceed with best practices on stranding management (dead vs alive, small vs large, single vs mass strandings) for the next MoP (Nov 2019)
- Regional experts/laboratories
- Best practices should be updated (wiki? periodic review?)